Brebner Flats

Wildlife Report

Prepared by:
Mark Bellis
Wildlife Biologist

For:
St. Joe Ranger District
Idaho Panhandle National Forests

December 2018
Updated 12/4/18

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at http://www.ascr.usda.gov/complaint_filing_cust.html and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov .

USDA is an equal opportunity provider, employer and lender.

The Forest Service uses the most current and complete data available. Geographic information system (GIS) data and product accuracy may vary. They may be developed from sources of differing accuracy, accurate only at certain scales based on modeling or interpretation, incomplete while being created or revised, etc. Using GIS products for purposed other than those for which they were created may yield inaccurate or misleading results. If a map contains contours, these contours were generated and filtered using the Digital Elevation Model (DEM) files. Any contours generated from DEMs using a scale of less than 1:100,000 will lead to less reliable results and should only be used for display purposes. For more information contact the St. Joe Ranger District at 222 S. 7th Street Suite 1, St. Maries, Idaho, 83861; (208)245-2531.

Reported mileages are estimates and may vary depending on how they are rounded and what models and equations they are used for or result from.

Table of Contents

Wildlife

Introduction

This document details the analysis and discloses the potential effects on Threatened, Endangered, Proposed, Forest Service Sensitive species, and focal wildlife species from the Brebner Flats Project alternatives on the St Joe Ranger District of the Idaho Panhandle National Forests (IPNF). The project area is located in the St. Joe Ranger District of the IPNF. It lies south of Forest Highway 50 (FH 50) and the St. Joe River, directly south of the town of Avery, Idaho (Appendix D Map 1 - Vicinity Map) The project area boundary encompasses about 11,779 acres, including 8,820 acres of National Forest System lands and 2,959 acres of privately-owned lands surrounding the Kelly Creek and Siwash drainages.

The Brebner Flats project proposes a variety of forest resource management activities on National Forest System lands within and around the Kelly Creek and Siwash Creek drainages. The project was initiated to improve vegetation resiliency, contribute to a sustainable level of timber products, and reduce hazardous fuels. Proposed vegetation management activities including timber harvest and tree planting; and road and travel management changes, including decommissioning or storing some roads or road segments and changes for public motorized access.

The St. Joe Ranger District has conducted an analysis of the existing forest conditions in the project area, and has identified about 1,719 acres of the approximately 11,779-acre project area that would benefit from treatment all of which will be regeneration harvest. No timber harvest would occur in the project area's old growth stands or in stands where timber harvest has occurred relatively recently. Riparian areas, wildlife buffers, and the Wild and Scenic River Corridor were not proposed for timber harvest.

To facilitate the proposed timber harvest, approximately 2.05 miles of new and 4.04 miles of temporary roads would be constructed. In addition, 2.96 miles of road reconstruction will occur. After replanting is complete in the harvest units, the roads would be stored for future administrative use. Temporary roads are roads that are constructed to access landings and are rehabilitated upon completion of all harvest activities. The temporary roads would be recontoured after use to the approximate shape of the surrounding terrain. These temporary road segments are generally on dry ridgetop locations and are not located in wet/moist areas.

Vegetation in the immediate analysis area is dominated by grand fir and Douglas-fir, and lodgepole pine. All of the lodgepole pine stands in the project area are over-mature, decadent and infested by, or are considered at high risk for, mountain pine beetle attacks: a trend that is expected to continue into the near future. Root diseases are found in stands throughout the project area and are associated mostly with stands dominated by true firs, western hemlock, and Douglas-fir. Root disease can be found on lodgepole pine and Engelmann spruce.

Regulatory Framework

The regulatory framework providing direction for the management of wildlife habitat most pertinent to this analysis comes primarily from the following sources:

- The Endangered Species Act of 1973 (ESA), as amended
- National Forest Management Act of 1976 (NFMA)
- The Migratory Bird Treaty Act of 1918, as amended

- IPNF Forest Plan (USDA Forest Service 2015)
- Forest Service Manual (FSM) and Handbook (FSH) direction

Following is a summary of regulatory guidance and its relation to the management of wildlife species and habitats on the IPNF.

Threatened, Endangered and Proposed Species

The National Forest Management Act (NFMA) requires projects to be consistent with Forest Plans, which for this project is the Idaho Panhandle National Forest 2015 Revised Land Management Plan (Forest Plan). The IPNF Forest Plan provides additional direction to "manage vertebrate wildlife habitat to maintain viable populations" of wildlife and "to contribute to the conservation and recovery of listed species" in accordance with species recovery or management plans (USFS 1987).

The Endangered Species Act (ESA) requires the Forest Service to assist in the recovery of threatened, endangered, and proposed (TEP) species and the ecosystems upon which they depend. Section 7 of the ESA directs federal agencies to ensure that actions authorized, funded, or carried out by them are not likely to jeopardize the continued existence of any threatened or endangered (T&E) species or result in the destruction or adverse modification of their critical habitat. The IPNF is required to consult with the U.S. Fish and Wildlife Service (USFWS) if a proposed activity may affect individuals or habitat of a listed species. The direction requires the FS to complete biological assessments to document whether projects would likely have adverse effects on identified habitats or individuals of threatened or endangered animals.

On August 10, 2018, the USFWS online endangered species list was checked for the Brebner Flats project. Terrestrial endangered and threatened wildlife species on the list that may occur within the project area (Shoshone County) are limited to Canada lynx (*Lynx canadensis*). Per a June 15, 2016 letter from the USFWS (WL1), the status of the wolverine is proposed; and their concurrence with the programmatic biological assessment is still applicable. A proposed rule was published on October 18, 2016 (USFWS 2016).

Sensitive Species

The Forest Service Manual directs the Regional Forester to identify sensitive species for each National Forest where species viability may be a concern. The direction requires the Forest Service to manage the habitat of the species listed in the Regional Sensitive Species List to prevent further declines in populations, which could lead to federal listing under the Endangered Species Act.

Effective May 27, 2011, the regional forester updated the sensitive species list for the Northern Region of the Forest Service (USDA Forest Service 2011a). There were no changes from the previous (2004) list on the IPNF. Since that time, the gray wolf has been removed from the list of threatened, endangered, and proposed species and subsequently placed on the sensitive species list. The status of this species will periodically be reviewed by the Forest Service.

USDA Forest Service policy (FSM 2670) requires a review of programs and activities through a biological evaluation, to determine their effect on sensitive species. Sensitive species are determined by the Regional Forester (FSM 2670.5) and are those species for which population viability is a concern. The Idaho Panhandle National Forests (IPNF) Forest Plan standard states that habitat of sensitive species listed in the Regional Sensitive Species List (WL2) will be

managed to prevent further declines in populations that could lead to federal listing under the Endangered Species Act (USFS 1987).

Management Indicator Species – Focal Species

Management Indicator Species (MIS) were identified in the Forest Plan Revision process and were proposed because they represented an issue or concern. These wildlife MIS species – elk and the landbird assemblage – were not selected because of a viability concern, and their viability was not to be analyzed or monitored at the project level (USDA Forest Service 2013a). On June 23, 2016, the IPNF administratively changed the monitoring under the Plan to comply with the 2012 Planning Rule (USDA 2016). At that time, MIS were removed and the landbird assemblage (Olive-sided Flycatcher, Dusky Flycatcher, Hammond's Flycatcher, Chipping Sparrow and Hairy Woodpecker) were added as Focal Species to monitor the integrity of terrestrial vegetation structure and function.

The focal species concept uses the coarse-filter approach for providing diversity of plant and animal communities and the persistence of native species in the planning area. Therefore, it is inappropriate to analyze effects to focal species at the project level. Instead, focal species are used to monitor effects of the Plan (WL15), and will be discussed in biannual monitoring evaluation reports. The landbird assemblage is monitored at the Forest-level scale by the ongoing effort of the Integrated Monitoring using Bird Conservation Regions (Halka et al. 2017).

Elk, although not protected under any legal framework, is an important species to the Forest Service. The majority of wild elk are dependent on the habitat provided by the National Forests and spend all or part of their lives on our lands. They are an important species from a recreational perspective, whether it is through wildlife watching or hunting and hence, important economically, for many small, rural communities throughout Montana and Idaho. With the change from MIS to focal species; elk only needs to be analyzed for effects to elk security habitat. Other aspects of elk habitat can be analyzed if important to the project.

Other Wildlife Species

The Migratory Bird Treaty Act (MBTA), as amended, made the taking, killing or possessing of migratory birds unlawful. Executive Order 13186 of 2001 clarified the responsibilities of Federal agencies regarding migratory bird conservation and directed Federal agencies to evaluate the effects of Federal actions on migratory birds with an emphasis on species of concern. The Executive Order also directed Federal agencies to develop a memorandum of understanding (MOU) with the Fish and Wildlife Service (FWS) regarding their role with respect to the MBTA.

In December 2008, the Forest Service entered into an MOU with the Fish and Wildlife Service that further clarified the responsibility of the Forest Service to protect migratory birds (USDA Forest Service and USDI Fish and Wildlife Service 2008). In the MOU, the Forest Service agreed to consider the most up-to-date Fish and Wildlife Service list of Birds of Conservation Concern (USDI Fish and Wildlife Service 2008) when developing or amending land management plans, and to evaluate the effects of agency actions on migratory birds within the NEPA analysis process, focusing first on species of management concern along with their priority habitat and key risk factors. For the Idaho Panhandle National Forests, the bird species of management concern include those species designated as sensitive and focal species.

In December 2017 the Principle Deputy Solicitor for the United States Department of the Interior issued Memorandum 37050 which determined that the MBTA does not prohibit incidental take of migratory birds (USDI Office of the Solicitor 2017). The USDA Forest Service MOU with the Fish and Wildlife Service expired December 31, 2017. The MBTA and the related Executive Order remain in place as do all related FWS regulations and permitting processes. Migratory birds are monitored through data collected by the Bird Conservancy of the Rockies and their Integrated Monitoring of Bird Conservation Regions (IMBCR).

Under the Revised Forest Plan (2015) raptors, in general, are covered by FW-GDL-WL-20 requiring that management activities on NFS lands avoid/minimize disturbance to known raptor nests. The new plan has no specificity for goshawk surveys but since goshawks were identified prior to the new plan being implemented, active nest restrictions remain in place. Surveys have been and will continue (WL3) until project completion. Moving forward, contractors and FS personnel are encouraged to report any know raptor nests to the district biologist. If occupied nests are identified in the project area seasonal restrictions will be put in place in order to ensure the fledging of chicks.

For passerines and other species, healthy, multi-aged, diverse forests are key to sustaining healthy populations, which is what this project is seeking to accomplish. In a literature review by Haulton (2008) no evidence was found to substantiate the claim that nesting season logging activities have a negative population-level impact on Neotropical migratory birds. In contrast, many scholarly publications report forest management activities improved habitat conditions (e.g., Brawn et al. 2001, Keller et al. 2003), resulting in increased avifaunal abundance (e.g., Baker and Laki 1997, Keller et al. 2003, Campbell et al. 2007, Augenfeld et al. 2008), nest success (e.g., Weakland et al. 2002), and species diversity (e.g., Costello et al. 2000, Keller et al. 2003, Campbell et al. 2007, Augenfeld et al. 2008) across managed forest landscapes. Contradictory, creating a monoculture forest, such is occurring in China, DOES have a negative effect on avian diversity (Sreekar et al. 2016)

Scope of the Analysis

Geographic Scope

The geographic scope of potential effects on wildlife for this analysis was determined based on the spatial extent of proposed federal actions. The project area is located directly south of Avery, Idaho, just below County Road 50 (FH 50). The proposed activities occur on and near Siwash Peak and Bonehead Hill and encompass the Kelly Creek and Siwash Creek drainages, both of which flow into the St. Joe River. The project is located in all or portions of sections 1-2, 11-12, T44N, R5E; section 6, T44N, R6E; sections 13-16, 21-28, 34-36, T45N, R5E; sections 19-20, 30-31, T45N, R6E, Boise Meridian. (Appendix D, Map 1).

The appropriate scale or geographic bounds for wildlife effects analysis varies on a species-by-species basis and may include a review at multiple scales. Varying scales that were considered include the entire project area (about 11,779 acres), the IPNF (2.5 million acres), and the Northern Region of the Forest Service (25 million acres).

Direct, indirect, and cumulative effects were considered individually for each wildlife species and associated habitat to arrive at a final determination of effects. For those species unaffected by the proposal, additional analysis of direct, indirect, or cumulative effects was not necessary. The species' status, habitat conditions, and population trends across the appropriate scales were reviewed to consider the potential effects from the project in concert with larger scale trends, as

well as national forest-level and regional-level goals. See Table 3 for a list of species not analyzed in detail and Appendix C for preliminary analysis information on these species.

For species analyzed, National Forest System (NFS) lands within the defined Brebner Flats Project area were used as the cumulative effects analysis area. This area is approximately 11,779 acres and is large enough to accommodate at least single home ranges for highly mobile species or to sustain the complete life cycle of most non-migratory wildlife as well as breeding and nesting habitat for migrating birds.

To assist in management of elk hunting Idaho Fish & Game has established twenty-eight elk zones throughout the state and within those zones hunting units. The Brebner Flats project is located entirely within Elk Management Unit (EMU) 7-6, which is the geographic scope for the elk security analysis.

Temporal Scope

The temporal scope of the analysis is a function of the nature of the proposal, the geographic scope of the analysis, ongoing management goals/actions, and natural events. The analysis assesses effects based on both existing conditions at the time of the analysis and potential conditions (e.g., capable habitat that may or may not be currently suitable) at some undetermined time in the future. The analysis would provide a representation of effects until, at some point in time, future unforeseeable actions or events result in appreciable change. The temporal scope of the analysis would be influenced by the location and nature of future management actions and natural events. The time period that project-related disturbance may be present is expected to be from five to eight years, based on a five-year timber sale contract and additional post-sale fuel treatments. The effects of vegetation management from this project may be still apparent 50 or more years beyond this, barring other natural or artificial disturbance in the area.

Analysis Methods

The appropriate methodology and level of analysis needed to determine potential effects are influenced by a number of factors, including the purpose and need for the proposal, the nature of the proposal, various regulations/policies, potential for impacts, the risk to resources and species, and the information necessary for an informed decision.

There is some level of uncertainty associated with any analysis methodology: habitat associations are complex, some variables may be unknown or not described, and available data may not be as specific as that used in the scientific literature. However, this analysis is based on the most applicable scientific literature and uses the best available data. This information was validated, updated, and augmented by field review, aerial imagery, and reasonable assumptions based on current and previous management actions, professional judgment, and the combined knowledge of people from various sources (e.g., IDT members, public input). The methodology is commensurate with the existing knowledge, existing data, and the risks associated with the proposal. The analysis allows for a comparison of potential effects by alternative and a decision based on environmental consequences. Specific parameters for individual species are discussed in the “Methodology” section for each species analyzed.

Past actions and events including timber harvest, wildfire, road and trail construction, fire suppression, and insect/disease outbreaks on the St Joe Ranger District have influenced the existing availability and distribution of wildlife habitat. All past, present, and reasonably foreseeable actions listed in Table 1 were reviewed for their relevance to the wildlife analysis and their potential effects on wildlife. Those actions vary in their potential for impacts on wildlife,

the consequences of potential impacts, the measurability of effects, and how they are measured. Some actions may have impacts, but any measurable effects on wildlife are already factored into the analysis (e.g., road maintenance is a present and reasonably foreseeable action that may contribute to disturbance levels, but is a part of the impacts measured by miles and density of motorized routes). Also, some actions occur at a level that does not have a measurable effect (e.g., cutting Christmas trees for personal use or berry picking) or can't be quantified for measurement because of their stochastic nature and the inability to predict their extent (e.g., access for fire suppression).

Some wildlife species require a detailed analysis and discussion to determine the context and intensity of effects. Others may not be impacted, impacted at a level that is inconsequential, or potential impacts are adequately addressed through the design of the project. Generally, these elements do not require a detailed discussion and analysis. Some have argued that historical information is central to the analysis of cumulative effects (Schultz 2010), but this appears to contradict current Council on Environmental Quality (CEQ) direction that NEPA is "forward-looking," and requires analysis of "the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the agency proposal for action and its alternatives may have a continuing, additive and significant relationship to those effects" (CEQ 2005). Activities such as past timber harvest, wildfire and fire suppression, and insect/disease infestations may have substantially affected wildlife habitat, but these effects have resulted in the current stand structure/composition and are incorporated into the discussion of current conditions (see Affected Environment). Since these effects have already been factored in, they would not incrementally add to the effects of the proposed action(s) in a measurable way. As a result, these past actions and events do not receive detailed discussion in the "Cumulative Effects" sections.

More specific discussions regarding the analysis methodology can be found in the sections on individual species.

Issue Indicators

Potential effects, by relevant species, were identified and categorized as discussed in the Analysis Methods section above based on habitat relationships, scientific literature on effects associated with vegetation management, public motorized access, and the proposed alternatives. Measurement criteria are based on the types of potential effects, scientific literature (including conservation strategies if available), the nature of the proposal, and applicable data. The discussion below displays the indicators that would be used to measure effects on wildlife species. Indicators for each species vary and are based on those factors that could result in measurable effects (positive or negative) to the species. For most species being analyzed, appropriate habitat parameters were measured to distinguish potentially suitable habitat (specific parameters for individual species are discussed in the "Methodology" section for each species analyzed). A discussion of the changes in suitable habitat for each relevant species and the effects on species are disclosed in the "Environmental Consequences" section discussions.

Effects of Timber Harvest and Road Construction on Wildlife Habitat – Proposed timber harvest and road construction may fragment habitat for Sensitive and Focal Species; affect travel corridors for wildlife; affect interior forest habitat; and have cumulative effects on species and their habitat.

Issue Measurement Criteria:

- **Relevancy to determine the level of analysis**: Evidence of species occurrence, capable or suitable habitat present, potential for the proposed action to affect a species or its habitat.
- **Elk**: Change in disturbance and elk security which is defined as generally timbered areas greater than 250 acres over ½ mile from a motorized route (WL4).

Table 0-A. Past, Present, and Reasonably Foreseeable Actions Potentially Cumulatively Affecting Wildlife

Action	Past	Present	Reasonably Foreseeable	Discussed Under Cumulative Effects*	Explanation
Timber harvest and associated activities	X		X	Yes	Effects on habitat (e.g. forest structure and composition) of past timber harvest are measured in existing condition.
Wildfires	X	-	unknown	No	Effects of past wildfires on habitat have been factored into the existing condition.
Fire suppression	X	X	X	Yes	Effects on habitat (e. g. forest structure, composition and snag numbers) are factored into existing condition. Potential future fire suppression addressed in cumulative effects.
Road construction	X	-	-	No	Effects on open road densities and secure habitat from past actions are factored into existing condition.
Road decommissioning	X	-	-	No	Effects on open road densities and secure habitat from past actions are factored into existing condition.
Herbicide spraying for noxious weeds	X	X	X	No	This activity would not make appreciable habitat modifications. Potential effects are localized and inconsequential at the project-level scale.
Slashing	X	-	-	No	This activity is associated with (both in timing and location) and considered part of timber harvest operations; and its effects on habitat are accounted for with the existing condition.
Tree planting	X	-	-	No	Effects of past tree planting and fill-in replanting are captured in the existing condition.
Precommercial thinning	X		X	Yes	Effects of past pre-commercial thinning (PCT) on habitat (e. g. stand density and composition) are measured in existing condition. Ongoing and potential future PCT addressed in cumulative effects
White pine pruning	X		X	No	Potential effects are inconsequential at the project-level scale.
Road maintenance	X	X	X	No	Unable to distinguish effects from public activities. Potential effects are measured by open road densities.
Public firewood gathering	X	X	X	Yes	Past effects are included in the existing condition for snag numbers and availability. Potential effects are analyzed with snag and cavity habitat.
Public use of motorized vehicles	X	X	X	Yes	The past effects are included in the existing condition for open road density. Potential effects addressed with elk analysis.

Action	Past	Present	Reasonably Foreseeable	Discussed Under Cumulative Effects*	Explanation
Other public recreational activities such as berry picking, hunting, hiking, etc.	X	X	X	Yes	Addressed in cumulative effects.
Wildfires on lands under other ownership	X	-	UK	No	The past effects of wildfire on private lands are included in the existing condition for wildfire on private lands.

Species Analyzed in Detail

Table 0-B summarizes the wildlife species and wildlife habitat components analyzed in more detail, the rationale for analysis (and conditions that influence the scope of analysis), and a brief description of their habitats.

Table 0-B. Wildlife Species Analyzed in Detail

Common Name (*Scientific Name*)	Habitat	Rationale for Detailed Analysis
Elk Security		
Elk (*Cervus elaphas*)	Mosaic of habitat types that provide areas for foraging and areas for thermal and security cover.	Project may impact elk security.

Species Not Analyzed in Detail

A preliminary analysis was conducted for each potentially affected wildlife species and their habitat to determine the scope of project analysis. The species listed in Table 0-C would not likely be affected by proposed activities because: 1) they do not have suitable habitat or are not regularly present or expected to be in or near the proposed activities; or 2) they are affected at a level that does not increase risk to the species, or potential effects have been adequately addressed by altering the design of the project. For these reasons, these species were not analyzed in detail. Preliminary analysis information for species not analyzed in detail is located in Appendix C of this document.

Table 0-C. Wildlife Species Not Analyzed in Detail

Common Name (*Scientific Name*)	Habitat	Rationale for Elimination from Detailed Analysis
Threatened and Endangered Species		
Canada Lynx (*Lynx canadensis*)	Higher elevation lodgepole pine and spruce/ fir forests with adequate prey base of snowshoe hares, its primary food.	Project does not occur within an LAU (Lynx Analysis Unit) and no suitable habitat in project area.
Grizzly Bear (*Ursus arctos*)	Habitat generalist. Denning areas isolated and remote from human development.	The species is not known or suspected on the St. Joe Ranger District.
Woodland Caribou (*Rangifer tarandus caribou*)	Above 4,000 ft. in Engelmann spruce/subalpine fir and western red cedar/western hemlock forests.	The species is not known or suspected on the St. Joe Ranger District.
Proposed Species		
North American Wolverine (*Gulo gulo*)	Far-ranging omnivorous habitat generalist.	No persistent snow or suitable maternal denning habitat near activity area.
Sensitive Species		
Fisher (*Pekania [Martes] pennanti*)	Mesic, contiguous mature forest habitats with ≤5% openings	Based on habitat analysis the project area is considered low quality for a home range and unlikely to be occupied.
American Peregrine Falcon (*Falco peregrinus anatum*)	Open habitats near cliffs and mountains. Nesting cliffs near an adequate prey base.	No impacts to suitable nesting habitat, there is no suitable habitat in the project area.
Bald Eagle (*Haliaeetus leucocephalus*)	Normally nest and forage near large bodies of water.	No impacts to nesting, winter roosting or foraging habitat.

Common Name (*Scientific Name*)	Habitat	Rationale for Elimination from Detailed Analysis
Gray Wolf (*Canis lupus*)	Large areas with high prey densities and isolation from human activities. Availability of den and rendezvous sites.	No reduction in prey densities, increase in public motorized access, or disturbance to potential den or rendezvous sites.
Black-backed Woodpecker (*Picoides arcticus*)	The presence of bark-beetle outbreaks and post-fire areas in forested habitats.	No immediate post-fire habitat or areas of extensive insect infestation proposed for treatment.
Black Swift (*Cypseloides niger*)	Builds nest behind or next to waterfalls and wet cliffs.	No impacts to suitable nesting habitat, there is no suitable habitat in the project area.
Coeur d'Alene Salamander (*Plethodon vandykei idahoensis*)	Springs, seeps, spray zones.	Suitable habitat would not be affected by proposed activities.
Common Loon (*Gavia immmer*)	Large, clear lakes below 5,000 ft. in elevation with at least a partially forested shoreline.	No impacts to suitable habitat, there is no suitable habitat in the project area.
Harlequin Duck (*Histrionicus histrionicus*)	Shallow, swift streams in forested areas.	No streams with potential breeding habitat in the project area.
Northern Bog Lemming (*Synaptomys borealis*)	Bogs, fens and, wet alpine and sub-alpine meadows.	The species is not known or suspected on the St. Joe Ranger District.
Townsend's Big-eared Bat (*Corynorhinus townsendii*)	Caves, mines, and abandoned buildings.	No impacts to suitable roosting habitat, there is no suitable habitat in the project area.
Western Toad (*Bufo boreas*)	Breed in lakes, ponds, streams and persistent water sources.	Inland Native Fish Strategy (INFS) buffers and Best Management Practices (BMPs) reduce risks to toads.
Pygmy Nuthatch (*Sitta pygmaea*)	Ponderosa pine habitat, especially mature and old growth stands.	No suitable habitat for pygmy nuthatch
Fisher (*Martes pennanti*)	Mesic mature forest habitats	No suitable habitat for fisher in the project area due to amount of oepnings.
Flammulated Owl (*Otus flammeolus*)	Mature or old growth ponderosa pine and Douglas-fir forest.	Project area capable of supporting multiple home ranges and project may have impacts on suitable habitat.
Fringed Myotis (*Myotis thysanodes*)	Caves, mines, and abandoned buildings; large snag habitat in dry-site forest.	No caves, mines, or abandoned buildings in the project area but some project work will occur in dry site habitat.

Affected Environment and Environmental Consequences

Introduction

The distribution and abundance of wildlife is primarily a function of habitat conditions (e.g., vegetation type and successional stage). These conditions reflect inherent fixed attributes (as depicted below in the description of capable habitat) as well as disturbance types and frequencies (e.g., fire, windthrow, landslide, and insect outbreaks). Wildlife species occupy their preferred niche on the landscape and move from place to place as forest structures change and different habitat conditions develop (Clark and Sampson 1995). Consequently, wildlife species have not necessarily persisted indefinitely in areas where they are found today because of the dynamic and shifting environments in which they live. Given the often-conflicting habitat requirements of many species, a sound strategy for management is to maintain a complex pattern of forest types

and age classes across the landscape that encourages biodiversity and emulates the historic patterns.

Ecological disturbances lay the foundation for landscape patterns and strongly influence wildlife populations. Disturbances that arise from natural processes or human actions can alter these landscape patterns and wildlife habitat, directing wildlife abundance and composition. In addition to altering habitat due to direct impacts (timber harvest), humans can alter habitat indirectly by influencing natural disturbance patterns. For example, fire suppression results in changes in vegetation composition and structure and subsequent susceptibility to various natural disturbances.

In the absence of disturbance, vegetation follows a gradual and more predictable sequence of change called succession. As vegetation moves through each stage of succession, the composition of wildlife species shifts accordingly. Wildlife species have distinctive successional strategies. Some species are more suited to the early stages of forest succession where grasses, forbs, and shrubs dominate the site, while others are better suited for the later stages of forest development (e.g., old growth). Other species are habitat generalists and have adapted to a wide array of successional stages.

Characterization of Habitats

Direction for this project comes from the 2015 IPNF Forest Plan, which sets the direction for managing resources of the Forest.

National Forest System lands in the Brebner Flats Project Area have been assigned the following Management Area (MA) designations:

- 20% are MA-2a; lands designated as Wild and Scenic River
- 80% are MA-6; lands designated as general forest

Ownership in the drainage is entirely Forest Service lands.

Over time, forest vegetation in the Brebner Flat project area has departed from the historical range of variation due to a combination of fire suppression, the introduction of white pine blister rust, and past management practices. White pine was a more prevalent component of the forests in the area before white pine blister rust and subsequent white pine salvage operations. Additionally, the stand-replacing fires of 1910 and 1926, along with the resulting focus on fire suppression, further reduced the presence of white pine, western larch, and ponderosa pine on the landscape. Historically, these species represented a larger and important component of forested stands in the area contributing to a more resilient species composition.

In place of these early-seral species, the project area is currently dominated by grand fir, Douglas-fir, and lodgepole pine. This represents an increase from what had been historically present on the landscape. This change in stand composition does not reflect the desired condition as described in the Forest Plan and has made these stands more susceptible to disease and disease-related mortality. In addition, this change in composition and lack of disturbances, such as wildfire, has resulted in a lack of desired structural diversity, further contributing to the vulnerability of the forest to succumb to insect and disease outbreaks and high-severity wildfires.

Further complicating these conditions, all of the lodgepole pine stands in the project area are over-mature, decadent and infested by (or are considered at high risk for) mountain pine beetle

attacks: a trend that is expected to continue into the near future. The presence of infested and susceptible lodgepole on the landscape also creates a need to improve stand resiliency by increasing species diversity and having a better mix of age and size classes.

Root diseases are found in stands throughout the project area and are associated mostly with stands dominated by true firs, western hemlock, and Douglas-fir. Root diseases were also found on lodgepole pine and Engelmann spruce in the project area.

A desired condition for the IPNF is to have more forest "… dominated by western white pine, ponderosa pine, and western larch … less of the forest is dominated by grand fir … Douglas-fir, lodgepole pine …" (FW-DC-VEG-01) with an objective of having more resilient forest conditions (FW-OBJ-VEG-01, FW-DC-VEG-06). The preferred species for the project area are western white pine, western larch, and ponderosa pine, which is consistent with the Forest Plan.

Organization

The analysis and discussion of existing condition and project effects on various wildlife species are organized as follows:

Habitat Relationships

This section describes the natural history, status, and distribution of wildlife species analyzed in detail, which have been identified as species that could potentially be affected by proposed activities. It also describes the current conditions and relevant habitat components that may or may not be affected by the alternatives. Information presented in this section is based on scientific literature, wildlife databases, professional judgment, recent field surveys, and habitat evaluations.

Methodology

The appropriate methodology and level of analysis needed to determine potential effects are influenced by a number of variables including the presence of species or habitat, the scope and nature of the activities associated with the proposed action and alternatives, and risk factors that could ultimately result in meaningful adverse or favorable effects. The screening process references the following documents and uses a variety of information including scientific literature, resource inventories, and sighting records:

- Integrated Scientific Assessment for Ecosystem Management in the Interior Columbia Basin
- Idaho Panhandle National Forests Land and Resource Management Plan and amendments
- Available Conservation Assessments and Strategies for wildlife species

The "Methodology" subsection for each species describes the process used in isolating individual habitat components that may be limiting on the landscape or at risk from management activities. IPNF personnel conducted site visits of a substantial portion of representative habitat for potentially affected species in the analysis area, with emphasis placed in proposed treatment areas. In some cases, habitat information collected in the field was supplemented by queries of the stand components (FSVEG) and activities (FACTS) databases, or with aerial photograph interpretation. This section also outlines the methodology for assessing the effects of the alternatives on individuals or habitat of the species.

Affected Environment

The resource information provided, especially as it relates to habitat analysis, includes past actions and events that have influenced vegetative changes to what is now part of the existing condition. An important concept in the existing condition descriptions and analysis is the difference between capable habitat and suitable habitat. Capable habitat refers to the inherent potential of a site to produce essential habitat requirements of a species. The vegetative structure and composition on the site (e.g., stand age, cover type, or stand density) may not currently provide the necessary attributes to support a species, but it has the fixed attributes that would enable it to provide those variables under appropriate conditions. Some examples of fixed attributes are slope, aspect, soil, or elevation. Suitable habitat refers to wildlife habitat that currently has both the fixed and variable stand attributes meeting a given species' habitat requirements. Variable attributes change over time and may include stand age, cover type, stand density, tree size, or canopy cover. Suitable habitat may be identified based on its ability to currently provide suitable habitat for a limiting factor such as nesting habitat. Since it can be difficult to determine if currently unoccupied habitat contains all attributes necessary to meet a species' requirements (some of which may be difficult to measure, are not easily discernible, or are previously undocumented by research), stands that appear to contain the necessary habitat components based on habitat validation surveys are labeled as potentially suitable.

Habitat estimates are limited to NFS lands, as both timber industry and state lands in the area have been logged, roaded and developed, or are expected to be in the future. These lands cannot be relied upon to provide habitat in the future because they are not under FS jurisdiction; so they are not used in calculations.

Direct and Indirect Effects

This section displays and discusses the effects on wildlife species identified as potentially affected by the alternatives. Effects discussions include direct effects (effects caused by the action occurring at the same time and place) and indirect effects (effects caused by the action that are later in time or removed in distance, but still reasonably foreseeable), any of which may have positive or negative consequences. Information presented in this section is based on scientific literature, wildlife databases, professional judgment, field surveys, and habitat evaluations. Only proposed activities that have the potential to impact a given species will be analyzed in this section.

Potential effects to species are limited to NFS lands, as both timber industry and state lands in the area have been logged, roaded and developed, or are expected to be in the future. These lands cannot be relied upon to provide habitat in the future because they are not under FS jurisdiction; so they are not used in calculations.

Cumulative Effects

Cumulative effects discussions include other ongoing and reasonably foreseeable actions, regardless of the source, that overlap the proposed action(s) in time and space and may incrementally add to the effects. As discussed above, the effects of past activities and disturbances have been incorporated into the existing condition, and are discussed in the "Affected Environment" subsection. Those ongoing or reasonably foreseeable activities that may be measurable or consequential at the project scale are discussed in this section.

Conclusion

This section will give a comparison of all the alternatives for the species and synthesize all the sections above and give a determination of the impacts of the project.

Consistency with Forest Plan

All applicable goals, direction, standards, and guidelines from the Forest Plan are addressed in this section.

Threatened and Endangered Species

The Brebner Flats project would have **No Effect** to any threatened or endangered species. Canada lynx, grizzly bear, or woodland caribou are not known or suspected to occur within the Brebner Flats project area. Appendix C of this document discusses why each threatened and endangered species was not analyzed in detail for the Brebner Flats project.

Proposed Species

The wolverine is the only proposed species identified on the IPNF. There is no denning habitat in the project area, which is needed to establish a resident population. There is, however, potential wolverine habitat located in in the southern portion of the project area (approximately 2,521 acres). Of the 2,521 acres within the project area boundary, 202 acres are located in harvest units. Per the wolverine programmatic Biological Assessment, since the limiting factor for wolverine is persistent snow, not changes in vegetation or habitat features, impacts from timber harvest and associated activities will not affect suitable habitat (WL5).

Sensitive Species

The Brebner Flats project would have **No Impact** on peregrine falcon, bald eagle, black swift, Coeur d'alene salamander, common loon, flammulated owl, fringed myotis, harlequin duck, northern bog lemming, pygmy nuthatch, and Townsend's big-eared bat. Fisher, gray wolf, black-backed woodpecker, and western toad have habitat or are suspected to occur within the Brebner Flats project area but are impacted at an inconsequential level. Appendix C of this document discusses why each sensitive species was not analyzed in detail for the Brebner Flats project.

Rocky Mountain Elk

Habitat Relationships

Rocky Mountain elk are widely distributed throughout Idaho, using a variety of vegetation types ranging from sagebrush deserts in the southern portion of the state to dense cedar-hemlock forests in the north. They are considered habitat generalists, and their basic requirements include forage, water, and, where they are hunted, hiding cover and secure areas (Leege 1984). Lower elevation winter range with good cover and forage or browse is also important to elk. Availability and distribution of these habitat components on each seasonal range determine the distribution and number of elk that may be supported (WL6 and WL7).

Because of their popularity as a hunted species, elk are particularly vulnerable to disturbance emanating from increased human access into elk habitat. As a result, motorized access management is viewed as an important tool for managing elk populations in Idaho. The IPNF Forest Plan addresses this issue through the concept of "elk security" - roughly based on recommendations from Hillis et al (1991).

Methodology

For the security analysis, the Elk Management Units (EMU) were agreed upon as the best biologically based unit of measure (FP page 32). The analysis area for elk is EMU 7-6 as noted in the 2014 IDFG Elk Management Plan (WL8). EMU 7-6 is 47,311 acres in size. The alternatives were analyzed relative to their impact on security habitat for elk. Additionally, the impacts of other non-security related direction in the revised Forest Plan was analyzed as well.

A stand that receives a seed tree, shelterwood, or clearcut harvest would be removed from elk security for 10 years after it is planted. Although there may be some harsher, dry sites that take longer, it is generally believed that 10 years is adequate for regenerated areas to reach the point of providing elk security.

The Forest Plan (FW-GDL-WL-13) states that secure elk habitat should be maintained or improved on NFS lands during the hunting season. The action alternatives include installing gates in the elk management unit to compensate for the loss of elk security that would result from openings that would be created with the proposed timber harvest (Map 2). Timber harvest can benefit security habitat over time if it is done to trend towards historic conditions and desired conditions for vegetation. In doing so, the resiliency of the timbered stand component of security habitat is improved or maintained and secure habitat is less likely to be lost to a large-scale disturbance (fire, insects, and disease).

Where possible, where management for elk would be of high emphasis based on coordination through IDFG, secure habitat should be improved; however, the project is located in EMU 7-6 which is a low priority for improvement (FP FEIS page 365). This is considered a low priority unit not because of poor quality but because of the limited opportunity to improve security here due to the large amount of private land within the EMU. There are generally three factors that contribute to the increase or decline of populations of elk: forage quality/availability, availability of hiding cover, and predation (including hunting) (Brodie et al. 2013). Because of all of the harvest that has occurred on private land in this EMU, forage is generally not a concern in this area. Adversely, the large amount of harvest in the area has made the maintaining of security more critical in this area.

Projects can impact elk security by opening "secure" roads to motorized use or by creating openings that reduce existing elk security areas. In these instances, the loss of security must be compensated for within the EMU by closing current "open" motorized routes; therefore, establishing "new" security at levels equal to or over what is lost by the project actions.

Environmental Consequences

Alternative A – No Action

Direct, Indirect and Cumulative Effects

No timber harvest would occur, so stands sapling size and larger would be unaffected. In addition, no additional roads would be constructed and no additional gate closures would occur under this alternative; therefore, current levels of elk security would be maintained. Over time under this alternative, some stands, those currently in seedling stage 10 years or younger, could potentially transition to security over time; therefore, increasing security in this EMU. Elk would continue to use the project area at existing levels.

Alternative B – Proposed Action

Direct and Indirect Impacts

Timber harvest activities/fuels treatments – Regeneration harvest would occur on 1,719 acres in the project area. The treatments would impact elk security by reducing the amount of generally timbered stands of 250 acres or more. This reduction in contiguous timbered stands removes areas from elk security. It will also increase the amount of forage habitat available to elk but not directly proportionate to the amount of area treated. Wisdom et al. (1986) found that optimal elk foraging habitat lies within 100 yards of cover areas, so any cleared habitat beyond 100 yards from cover will provide limited forage habitat for elk

The 1,719 acres of regeneration harvest would remove approximately 210 acres of elk security habitat from Elk Management Unit 7-6. Current elk security levels in EMU are 2,353 acres (Map 2). The timber harvest activities in the project area would reduce the level of security in EMU 7-6 to 2,103 acres (Map 2). The reduction in elk security (210 acres) includes activities associated with timber harvest such as the construction of roads, tree plantings, gopher control, and fuels treatments, in the project area.

Trail Closures to Compensate for Reduction in Elk Security - The seasonal closure (September 5 through December 15) of ATV Trail 1956E (Table 1), to compensate for this loss, would increase elk security in EMU 7-6 by 314 acres leading to a net gain in security of 104 acres (Table 2, WL 9).

Temporary Roads - Approximately 4.04 miles of temporary roads are scheduled to be constructed under Alternative B. Temporary roads would be decommissioned after use so there would be no motorized vehicle use occurring post project. The roads, like the harvest units, would not return to security for at least 10 years - when the trees reach sapling size or shrubs such as alder reach sapling height. The construction of the temporary roads would remove habitat from security but unlike permanent roads, the roads are constructed within the harvest units and are therefore captured under "timber harvest activities".

Table 1. Proposed Road/Trail Closures for Elk Security

Current Road Prescription (by Segment)	Existing Miles (per Segment)	Road Number	Proposed Change Description	Proposed Change (Miles)
OHV ≤ 50"	1.07	1956E	Closed - Gated	-1.07
			Total Proposed Change	-1.07

Road Decommissioning - Roads proposed for decommissioning are currently gated and incorporated into current condition and existing levels of elk security. This would not affect elk security but should increase the effectiveness of current gate closures, potentially leading to a decrease in hunting pressure in areas where gate closures are breached.

Pocket Gopher Baiting - This activity may be done to control pocket gophers in the regeneration cuts in the action alternative if needed, to protect planted seedlings once planted. Since this activity would be done after timber harvest as a follow-up to planting, it is accounted for under timber harvest and associated activities.

Cumulative Impacts

As part of the existing condition, EMU 7-6 was looked at for changes that may have occurred

since elk security was first delineated in the revised forest plan. For this project elk security was revised to represent current conditions in the EMU. The anlysis has determined that the project would not add cumulatively and substantially to the effects of other projects or activities in the analysis area and that elk security levels would actually increase in the EMU.

Timber Harvest Activities - There are no current timber sales within the Brebner Flats project area but there are foreseeable timber harvest activities in the Brebner Flats project area after the completion of this project, exclusively on private lands. In our elk security calculations all private lands are considered "not secure", therefore any additional harvest in those areas will not change (decrease) the amount of elk security since it was already accounted for.

Fire Suppression - Fire suppression would help maintain current levels of elk security by decreasing the probability that fires would kill stands of trees. Burned areas would be evaluated as needed, to determine if they are continuing to provide hiding cover.

Pre-commercial thinning - Ten to 20 years after planting, stands would be evaluated for non-commercial thinning in an effort to optimize individual tree growth and promote long-lived early-seral species. In the foreseeable future, these stands targeted for pre-commercial thinning could remain as areas "not secure" for elk but it depends on the prescriptions. There is potential that they could remain "secure". This will be evaluated if another project occurs in EMU 7-6 in the future.

Public Activities (firewood gathering, recreational activities, and motorized vehicle use) – Personal-use firewood gathering would not take stands out of security since this action generally occurs along roads which have already been accounted for in the 0.5 mile buffer placed around roads. In addition, firewood gathering should not create large enough openings to take areas out of security. Public motorized vehicle use during hunting (via ATV or UTV) impacts elk and was the primary driver for developing elk security. Current levels of security have been established by closing roads to motorized use during the hunting season; therefore, these activities, now and in the future, have been accounted for and are documented in the recently completed St. Joe Travel Plan. Potential increases in recreational activities, which may impact elk security, would be addressed as the needs and projects develop. There are no known future recreation project planned in the project area.

Table 2. Effects of Project Alternatives on Elk Security in EMU 7-6

	Existing/Alt. A	Alt. B
Current security in EMU 7-6 (acres)	2,313	2,313
Security lost due to project work (acres)	0	-210
Security gained by proposed road closures (acres)	N/A	314
Gain/loss of elk security	0	104
Post-project elk security (acres)	2,313	2,417

Conclusion

Under the action alternative elk security would improve in Elk Management Unit 7-6. Based on the improvement of elk security, the federal actions evaluated in this proposal would not cause any adverse cumulative effects. Although there may be temporary disturbance to elk during the

project initiation, the result of this project would be improved conditions for elk with no detrimental effects. Elk are expected to persist both in the project area and across the district.

Consistency with the Forest Plan

The IPNF Revised Forest Plan (2015) stated that the Forest would manage habitat for native ungulates (e.g., elk, deer, moose, and mountain goat) in coordination with state agencies (**FW-DC-WL-17**). The IPNF has coordinated with IDFG in developing and prioritizing elk management units, in addition to implementing prescribed burning throughout the district in order to increase quantity and quality of browse for ungulates, which is the case in the Brebner Flats project.

Under the Forest Plan, **FW-OBJ-WL-02** states that over the life of the Plan, the Forest will increase by 3, the number of high or medium priority elk management units that provide >30% elk security. This EMU is a low priority EMU under the Forest Plan and will not help the IPNF meet this objective. This project does, however, increases elk security in the EMU from 0.050% to 0.051%.

FW-GDL-WL-13 states that management activities in elk management units should maintain existing levels of elk security. Where possible, management activities in high and medium priority elk management units should improve elk security. Elk security would be improved in this low priority EMU in the action alternative.

Statement of Findings

Based on the analysis in this document, I conclude that the Brebner Flats Project would have no impact on the following sensitive species: bald eagle, black swift, Coeur d'Alene salamander, common loon, harlequin duck, Northern bog lemming, peregrine falcon, flammulated owl, fringed myotis, pygmy nuthatch, or Townsend's big-eared bat. This project may impact individuals or habitat for black-backed woodpecker, fisher, gray wolf, and western toad, but would not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species. Determinations for Federally Listed Threatened and Endangered Species and Species Proposed for Listing will be made under a separate Biological Assessment once a finalized action is decided upon. Preliminary analysis completed in this wildlife report indicates the project would have no effect on Canada lynx or Canada lynx critical habitat; grizzly bear, woodland caribou, and is not likely to jeopardize the continued existence of the North American wolverine.

Additionally, the project will lead to an increase in elk security in this Elk Management Unit. There would be no effect to other federally listed terrestrial wildlife species or critical habitat

Prepared by: /s/ *Mark Bellis* Date: 12/4/2018

Mark Bellis
Wildlife Biologist
St. Joe Ranger District, Idaho Panhandle National Forests

Appendix A: Sensitive Species Biological Evaluation Summary Table

The rationale for the conclusion of effects is contained in the Wildlife Report.

Table A- 1. Sensitive species biological evaluation summary of conclusion of impacts, Brebner Flats Project.

Species	Alternative A	Alternative B
American Peregrine Falcon	NI	NI
Bald Eagle	NI	NI
Black-backed Woodpecker	NI	MIIH
Black Swift	NI	NI
Coeur d'Alene Salamander	NI	NI
Common Loon	NI	NI
Fisher	NI	MIIH
Flammulated Owl	NI	NI
Fringed Myotis	NI	NI
Gray Wolf	NI	MIIH
Harlequin Duck	NI	NI
Northern Bog Lemming	NI	NI
Pygmy Nuthatch	NI	NI
Townsend's Big-eared Bat	NI	NI
Western Toad	NI	MIIH

NI = No impact

MIIH = May impact individuals or habitat, but will not likely contribute to a trend towards federal listing or loss of viability to the population or species

WIFV = Will impact individuals or habitat with a consequence that the action may contribute to a trend towards federal listing or cause a loss of viability to the population or species (considered a trigger for a significant action under NEPA)

BI = Beneficial impact

Conditions: Include any actions or activities that are necessary to maintain the determination of effects.

Recommendations: Include any activities or opportunities that are optional.

Conditions: None.

Recommendations: The district biologist should be notified if any sensitive species are observed during project activity.

This page intentionally left blank.

Appendix B: Project Design Features

Measures Related to Wildlife

Threatened, Endangered, Proposed, and Sensitive Wildlife Species Management

- Contract provisions for the protection of Threatened, Endangered, Proposed, and Sensitive (TEPS) species and settlement for environmental cancellation would be included. If TEPS species and/or significant habitat are discovered before or during project implementation the Sale Administrator and the district wildlife biologist would be notified so that if needed, measures could be taken to avoid impacts and meet Forest Plan Standards and Guidelines. Measures could include altering or dropping proposed units, modifying the proposed activity, or implementing buffers.

- The district biologist should be notified if any TEPS species are observed during project activity.

Gray Wolf

- Any active gray wolf den or rendezvous sites identified in or adjacent to proposed activity areas will be spatially and/or temporally buffered as appropriate. No project activities (excluding maintenance and hauling on year-round open road systems) will be allowed within one (1) mile of occupied sites, from April 1 through June 30 for den sites, and from July 1 through August 15 for rendezvous sites. Upon review by the Wildlife Biologist, these distances could potentially decrease based on topographical characteristics at each site.

Western Toad

- All fish-bearing streams would be buffered by 300 feet on each side. Perennial streams and wetlands larger than one acre in size are buffered from ground disturbing activity by at least 150 feet. Smaller springs, seeps, and wetlands would be buffered by at least 100 feet if any are identified near or within harvest units.

Goshawk/Raptors

- **Nests:** A no-activity area of 40 acres would be placed around any newly discovered goshawk nest or any nest that has been active in the past five years. If the nest tree is not roughly centered within the 40-acre no activity area, an additional no activity distance of at least 745 feet (the radius of a 40-acre circle) may be implemented between the nest tree and harvest units to reduce impacts to habitat around the nest site from project activities. The District Wildlife Biologist would determine if this additional no activity distance would be implemented based on factors such as topography, the location of the nest tree within the 40-acre nest area, and the distance of the nest tree from private ownership and/or existing roads.

- **Post-Fledging Areas:** Project activities would be suspended within the post-fledging areas from April 15 to August 15 to promote nesting success and provide forage opportunities for adults and fledgling goshawks during the fledgling dependency period. The units and road activities potentially affected by this design feature are subject to change year to year based on the location of the active nest during the year the activities are to occur. Activity restrictions may be removed after June 30 if the District Wildlife Biologist determines that a particular nest site is inactive or unsuccessful.

- Maintenance of landscape-level connectivity and minimization of fragmentation was incorporated into the design of all alternatives with timber harvest. Travel cover was identified and considered in terms of connectivity. Site-specific design features for units with proposed vegetation removal in designated travel corridors are found in Table E-2.

Big Game

- The proposed road storage may require obliteration for a distance of 300 feet, a sight-distance, or whatever distance is effective to eliminate motorized access. The amount and type of obliteration required would be the minimum needed to effectively prevent motorized vehicle use. This would vary depending on the slope and vegetation present. A guardrail barricade may be used if it can be placed to effectively prevent motorized access.

- Existing gates would remain in place. Temporary gates would be installed on any road to be used that is not behind a gate and is currently not drivable. During timber hauling, the gate would be closed and locked at the end of each day. For other operations, gates would be closed and locked after the passage of each vehicle.

Cavity Nesting Species

Recommendations for snag numbers and snag recruitment levels would be based on Forest Plan (2015) guideline **FW-GDL-VEG-04** and listed in table B-1.

Table B- 1. Recommended Snag and Snag Recruitment Levels to retain (where they exist) after Vegetation Management Activities (including Post-harvest Activities), by Harvest Type (USFS 2015)

Dominance Group	Biophysical Setting	Snags > 15"+ DBH	Live Trees > 15.0" DBH
Ranges per Acre where Treatments Result in a Seed/Sap Size Class (Regeneration Harvest)			
All except lodgepole pine	**Warm/Dry**	2.0 – 4.0	0.5 – 3.0
	Warm/ Moist	4.5 – 6.5	1.0 – 5.5
	Subalpine	3.0 – 5.0	1.0 – 3.5
Lodgepole pine	**All**	1.0 – 2.5	0.5 – 3.0
Ranges per Acre where Treatments Result in a Small or Medium Size Class (e.g., Commercial Thin)			
All except lodgepole pine	**Warm/Dry**	2.0 – 5.0	20.5 – 32.5
	Warm/Moist	4.0 – 6.5	26.0 – 34.0
	Subalpine	3.0 – 5.0	20.0 – 25.5
Lodgepole pine	**All**	1.0 – 3.5	11.0 – 19.0
Ranges per Acre for Treatments in the Large Size Class (e.g., Restoration)			
All except lodgepole pine	**Warm/Dry**	2.5 – 6.0	19.0 – 32.5

Dominance Group	Biophysical Setting	Snags > 15"+ DBH	Live Trees > 15.0" DBH
	Warm/Moist	6.0 – 12.5	32.5 – 47.0
	Subalpine	4.5 –11.5	23.0 – 45.0

- Snag Guidelines under **FW-GDL-VEG-05 & 06**
    - Group snags where possible;
    - Retain snags far enough away from roads or other areas open to public access to reduce the potential for removal (generally more than 150 feet);
    - Emphasize retention of the largest snags and live trees as well as those species that tend to be the most persistent, such as ponderosa pine, larch, and cedar;
    - Favor snags or live trees with existing cavities or evidence of use by woodpeckers or other wildlife.
    - During vegetation management activities (e.g., timber harvest), and in the event that retained snags (or live trees being retained for future snags) fall over or are felled (for safety concerns), they should be left on site to provide coarse woody debris.

Small Mammal Habitat

- In harvest units where slash piles are created, one pile per 5 acres would be left unburned to supply potential forest carnivore rest sites, provide cover for small animals (prey habitat), and serve as potential den sites (IDFG 1995). Piles left should be those closest to standing timber, such as the unit edge or a large cluster of leave trees.

Appendix C: Species Not Analyzed in Detail

Threatened and Endangered Species

Canada Lynx

Species Overview

Lynx occur in mesic coniferous forests that have cold, snowy winters and provide a prey base of snowshoe hare (Ruediger et al. 2000). In the St. Joe River drainage lynx habitat generally occurs above 4,000 feet in subalpine fir forests or cedar/hemlock types when in association (i.e., within approximately 600 feet) with subalpine fir and spruce habitat types. Habitats that support their primary prey include early successional stages resulting from natural disturbance and timber harvest. Characteristics of foraging habitat include a dense, multi-layered understory that provides cover and browse at ground level and at varying snow depths throughout the winter. Multi-story mature or late successional forests with a substantial understory of conifers, and/or small patches of shrubs and young trees, also provide lynx foraging habitat. The common component of natal den sites appears to be large woody debris. Den sites may be located within older regenerating stands or in mature conifer stands. For denning habitat to be functional it must be in or adjacent to foraging habitat (Ruediger et al. 2000).

Rationale for No Further Analysis

Habitat analysis for lynx is based on the Northern Rockies Lynx Management Direction (NRLMD), (USFS 2007). Objectives, standards, and guidelines for the maintenance of lynx habitat and populations apply only to lynx habitat within Lynx Analysis Units (LAUs). Lynx Analysis Units were re-mapped in 2008 and documentation of that process can be found in project file (WL10). The Brebner Flats project area is not within an LAU due to the low amounts of suitable habitat on the western half of the St. Joe Ranger District. The nearest LAU is about 15 miles away from the project area (WL11). There is no lynx critical habitat identified on the St. Joe Ranger District (USFWS 2009). The species is not known or suspected in the project area. Based on the lack of suitable habitat and occurrence there would be **no effect** on lynx habitat or the species and would have no effect on lynx critical habitat. No further analysis and discussion is warranted.

Grizzly Bear

Species Overview

Quality grizzly bear habitat provides minimum potential for grizzly/human conflicts, sufficient space, isolation from human developments, and diversity of habitats that provide food during different seasons. In northern Idaho, grizzly bears occupy cedar/hemlock, spruce-fir, lodgepole/larch, and shrub fields in the Selkirk Mountains and Cabinet/Yaak Ecosystems.

The St. Joe Ranger District is not in a Grizzly Bear Recovery Area (USFWS 2000), nor was it included in the Bitterroot grizzly bear evaluation area in the Grizzly Bear Recovery Plan Supplement: Bitterroot Ecosystem Recovery Plan Chapter (USFWS 1996). The St. Joe Ranger District is not expected to provide habitat for grizzly bears that would contribute to population recovery. Some alternatives in the Grizzly Bear Recovery in the Bitterroot Ecosystem FEIS did include the St. Joe Ranger District in an Experimental Population Area (USFWS 2000); however, no anticipated impacts to land use activities on public land were identified (USFWS 2000).

The southeastern portion of the St. Joe Ranger District is in the Bitterroot Grizzly Bear Primary Analysis Area of the Bitterroot Ecosystem. While there are no verified records or reports of grizzly bears on the St. Joe, in September of 2007 a male grizzly bear was shot and killed in the North Fork Clearwater River drainage south of the St. Joe Ranger District. This bear originated from the Selkirk area northwest of the St. Joe Ranger District. The route this bear took between the Selkirk area and where it was shot is not known, however, one possible route would have been the Bitterroot Divide along the Idaho/Montana border.

Rationale for No Further Analysis

In light of the 2007 grizzly bear shooting, the U. S. Fish and Wildlife Service surveyed the North Fork of the Clearwater drainage and the upper St. Joe drainage to assess if there are any grizzly bears in the area. Although based on current knowledge, the potential for grizzly bear occurrence on the St. Joe Ranger District and in the project area cannot be totally dismissed, there is nothing to suggest any occurrence other than the possibility of transient individuals; with even the potential for that considered to be unlikely. No grizzlies were detected via DNA or by cameras at 91 sites in the Bitterroots during the surveys in 2008-09 (Servheen and Shoemaker 2010). There is no known grizzly bear population occupying the St. Joe Ranger District, and the U.S. Fish and Wildlife Service has determined that a resident population of grizzly bears does not exist in the Bitterroot Ecosystem at this time (USFWS 2000). There is no evidence or reason to suspect that grizzly bears are present on the St. Joe Ranger District. The St. Joe Ranger District is not within any Bear Management Unit (BMU), linkage zone, or area of known grizzly bear use. Based on the above reasons, any project occurring on the St. Joe Ranger District would have **no effect** on the grizzly bear.

Woodland Caribou

Species Overview

The woodland caribou population is generally found above 3,000 feet in the Selkirk Mountains in Engelmann spruce/subalpine fir and western redcedar/western hemlock forest types. They are highly adapted to upper elevation boreal forests and do not occur in drier low elevation habitats, except as rare transients. Seasonal movements are complex and normally occur as altitudinal patterns, moving to traditional sites for different seasons. The Selkirk caribou population was emergency listed as Endangered in 1983, and a final ruling of its status appeared in the Federal Register in 1984 (USFWS 1994).

Rationale for No Further Analysis

The recovery area for the population is in the Selkirk Mountains of northern Idaho, northeastern Washington, and southern British Columbia, Canada. This St. Joe Ranger District is not within the Southern Selkirk Mountains Caribou Recovery Area, and there has been no caribou occupation of the St. Joe District for well over 100 years (Evan 1960). The St. Joe Ranger District also does not occur within identified critical habitat for woodland caribou (USFWS 2012). Consequently, any project that occurs on the St. Joe Ranger District would have no effect on woodland caribou and would have **no effect** on woodland caribou critical habitat.

Proposed Species

North American Wolverine

Habitat Relationships

Wolverines are a low density, wide-ranging species occurring over a wide variety of alpine, boreal and arctic habitats. They are primarily scavengers but will also hunt small animals and birds, and eat fruits, berries, and insects (Hornocker and Hash 1981). The southern portion of the species' range extends into high-elevation portions of Washington, Idaho, Montana, Wyoming, California, and Colorado. While Hornocker and Hash (1981) reported that wolverines tended to use lower elevations in the winter and higher elevations in summer, more recent research (Copeland et al. 2010) states that in montane habitats at southerly latitudes, wolverines remain at high elevations throughout the year. Instead, the presence of persistent spring snow cover (i.e., snow cover from April 24 through May 15) has been determined to define wolverine habitat year-round (Aubry et al. 2007). A review of wolverine research in nine radiotelemetry study areas revealed that approximately 95% of summer locations and 86% of winter locations fell within areas that had persistent spring snow cover at least one of seven years (Copeland et al. 2010).

Female wolverines give birth and rear young from mid-February to approximately the end of March in dens excavated in (often deep) snow. While dens in Idaho have been reported as occurring on "rocky sites, such as north-facing boulder talus or subalpine cirques" (USFWS 2013), Copeland et al. (2010) found that female wolverines also showed a preference for denning in habitats that had persistent spring snow cover at least five of seven years.

Because wolverine habitat is generally associated with areas of limited human presence, it has been suggested that the species actively avoids human activities (e.g., see Hornocker and Hash 1981). However, Copeland et al. (2010) stress that no causal relationship has ever been established for the spatial separation between wolverine use and human settlement, and suggest that areas associated with persistent snow, which include wolverine use and den sites, are generally removed from areas with human habitation or high levels of human use. Nonetheless, human-caused mortality, mostly from trapping and poisoning, in areas of historical (before 1961) overlap has been identified as a likely cause of reduced populations (USFWS 2013) and range loss (Aubry et al. 2007), and trapping of only a few individuals can negatively affect some populations (Lofroth and Ott 2007). Improved motorized access increases the potential for human/wolverine interactions, which can lead to shooting loss or incidental take by trapping. Wolverines are occasionally taken by trappers focusing on other furbearers such as bobcat and American marten.

Affected Environment

Current wolverine populations and trends in the contiguous United States are unknown. The scarcity of information is largely due to the difficulty and expense in studying an animal that is solitary and secretive and found mostly in remote areas at low densities. U.S. Fish and Wildlife Service estimates that approximately 250 to 300 individuals occupy this area, with the bulk occurring in the Northern Rockies (USFWS 2013).

In 2013, the U.S. Fish and Wildlife Service proposed listing the Northern Rockies distinct population segment of North American wolverine under the Endangered Species Act (USFWS 2013). However, based on their review of the best available scientific and commercial information, they determined that wolverine appear to be little affected by habitat modifications

and changes to the vegetative characteristics derived from land management activities such as timber harvest and prescribed fire. Furthermore, the proposed rule determined that the types of forest roads associated with wolverine habitat are unlikely to affect wolverine movement. Consequently, it was determined that these types of land management activities would not significantly affect the conservation of the United States population of wolverine (USFW 2013). On August 13, 2014, the USFWS withdrew its proposal to list the wolverine, finding that current and future factors affecting wolverine were, "not of sufficient imminence, intensity or magnitude to indicate that the wolverine is in danger of extinction (endangered), or likely to become endangered within the foreseeable future (threatened)" (USFWS 2014).

Approximately 2,521 acres of the Brebner Flats Project area is modeled to have persistent spring snow cover (i.e., at least one of seven years), and in this case only one of the seven years received snow. More importantly, there is no potential denning habitat (i.e., persistent snow cover for at least five of seven years) within the project area (WL5).

Rationale for No Further Analysis

Brebner Flats activities are located on a portion of National Forest System lands characterized by open roads, and past timber harvest. While these areas provide foraging opportunities for wolverine, they do not represent the secure habitat that wolverine seem to prefer (the nearest denning habitat is located approximately 6 miles southeast of the project area in the Landmark Peak area) (WL12). Foraging habitat does not appear to be limiting to wolverines on the St. Joe Ranger District, currently or in the foreseeable future.

There are no confirmed observations of wolverines near proposed activity areas. Given their wide-ranging nature, it is not unreasonable to assume wolverines may be present, although their presence is likely to be transitory. However, any disturbance to wolverine as a result of project activities would be temporary, and ample displacement habitat is available in adjacent areas. The habitat changes as a result of the Brebner Flats Project would have minor effects on this species. The effects to habitat would be minimal relative to the scale of a wolverine home range (approximately 34,840 to 122,564 acres (141 to 496 km^2) in Glacier National Park, MT (USFWS 2013). As a result, potential impacts to wolverine or their habitat would be discountable (small in scale) and would not be considered to be a threat to the persistence of the species. Consequently, the action alternatives, in conjunction with past, present, and reasonably foreseeable actions**, may impact individuals or their habitat, but would not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species**. The effects analysis of this project is covered by the programmatic Biological Assessment conducted by the Forest Service (WL13) and associated concurrence by USFWS (WL14).

Sensitive Species

Fisher

Rationale for No Further Analysis

Fishers are forest carnivores that occur at low population densities, occurring most commonly in landscapes associated with late-successional forests; especially in riparian areas (Powell and Zielinski 1994).

Contrary to what was once thought, evidence from more recent research (within the past 10 to 15 years) in western North America indicates that fisher is not old-growth conifer dependent and their home ranges are characterized by a mosaic of forest types and seral stages, including high

proportions of mid to late seral stands (42 percent to 72 percent of a home range) as well as lower proportions of open or non-forested stands (Raley et al. 2012). Based on a synthesis of recent research on fisher in western North America, Raley et al. (2012) contend that when establishing their home ranges, it benefits fisher to include a diversity of forest conditions. This increases their access to a diversity and abundance of prey species that use different forest conditions, while at the same time providing the habitat features the fisher themselves need for reproduction and thermoregulation. Sauder and Rachlow (2014) found that fishers in north central Idaho "preferentially used areas of moderate abundance of high canopy cover", and that the average home range contained 5% or less openings.

In summary, parameters for suitable fisher habitat are:

- **42-72% mid to late seral stage Small Saw Timber (SSAW) (10-15") or bigger and Saw Timber (SAWT) (15-20")**
- **More than a few hundred acres of potential denning habitat with 24" snags.**
- **A minimum of 40% cover in forested areas**
- **Home range should have <5% openings.**

While a large proportion of the project area has adequate canopy cover, about 8.0% is comprised of openings, primarily due to three sections of heavily timbered private land within the project area. The Brebner project area is not quite the size of an average fisher home range (12,000 acres) so some of the lands outside of the project area have to be considered when determining the suitability of an area for fisher. Based on NAIP imagery (2017), the majority of the areas just outside the project area are poor fisher habitat with a large amount of openings in almost every direction (see WL20,21). Given the high amount of openings within and just outside the project area, it is likely the Brebner Flat project area is at best a low quality fisher home range (WL16).

The IDFG Multi-Species Baseline Initiative study on the IPNF (Lucid et al. 2016) detected 7 fishers on the St. Joe between 2010-14. None of the detections were in the Brebner project area. Given the existing habitat quality, it is probable that the project area only receives low or transient fisher use.

The proposed action treats roughly 1,879 acres of the project area with regeneration harvest prescriptions. Of the 1,879 acres of proposed harvest, 778 acres of clearcut with reserves is proposed. Per communication with J. Ford (WL22) "Clearcut w/reserves reduce canopy cover to ~5%" which falls within the definition of "opening" (<10% canopy cover). This will create additional openings in the project area almost doubling the openings from 8% (948 acres) to 14.6% (1,722 acres) At this proportion of the project area it is unlikely fisher would consider this to be a suitable home range. This effect is expected to last between 10 and 20 years until the units have grown into a large sapling size class.

The proposed regeneration units would reduce the amount of potentially suitable habitat and create additional openings, most likely rendering the project area unsuitable as a potential home range. Given the existing low habitat quality, this would be a slight negative change. In the long term (50+ yrs.), the retention of large snags and down wood, an increase in patch size, the growth of treated stands to well-canopied more resilient timber types, and the maturation of existing capable habitat, should improve fisher habitat over the existing low quality condition.

As there is potentially suitable habitat in the vicinity of the project area, the chance of disturbance of individual fishers that may be present, though remote, is possible. However, when coupled with the reduced likelihood of use because of the low habitat quality; the potential for adverse

effects is low as fishers have relatively large home ranges with adequate areas to displace to during project activities.

There would be no consequential change to the open road system; and therefore no change in vulnerability to trapping. The storage of roads receiving unauthorized use will restore security habitat that benefits fisher.

As a result, the Brebner Flats Project, in conjunction with past, present, and reasonably foreseeable actions, ***may impact*** fisher ***or their habitat, but would not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species***. No further analysis and discussion is warranted.

American Peregrine Falcon

Species Overview

Peregrine falcons are seasonal migrants to northern Idaho, nesting in the northern temperate regions while wintering in the U.S. and southward. They nest on cliffs that are typically higher than 100 feet, with overhanging ledges or potholes and a vertical surface that provide protection from predation. Foraging areas associated with nest sites can include wooded areas, marshes, grasslands, and open water (Craig and Enderson 2004).

Rationale for No Further Analysis

There are no known historic eyries in the project area or the St. Joe Ranger District. There is no cliff or cliff-like habitat present in the project area. The species is not known or suspected to occur in the area. Given the lack of nesting habitat in the Brebner Flats project area; project activities would have **no impact** on peregrine falcons or potential habitat under any alternative. No further analysis and discussion is warranted.

Bald Eagle

Species Overview

Bald eagles occupy riparian or lakeshore habitat almost exclusively during the breeding season (USFWS1986). They select isolated shoreline areas with larger trees to pursue such activities as nesting, feeding, loafing, etc. Components of nesting habitat include proximity to sufficient food supply, the presence of dominant trees, and line-of-sight to a large body of water (often within 0.25 mile of water) (MBEWG 1991). Nest sites are commonly distributed around bodies of water > 80 acres or along major rivers. Bald eagles often forage year round near riffles, runs, and pools of rivers. Bald eagle winter habitat is mostly associated with areas of ice-free water where fish or waterfowl are available as prey.

Rationale for No Further Analysis

Although the St. Joe River, which does support nesting pairs, is near the Brebner Flats project area there are no known bald eagle nests or winter roosts in the vicinity of the project area. This has been verified through annual eagle surveys conducted by FS personnel. Surveys reveal that the nearest known active bald eagle nest to the project is at near the Huckleberry campground, approximately 22 miles from the project area. There would be no project activities within the distances recommended by the National Bald Eagle Management Guidelines for protection of bald eagle nests or roosting areas, and no impacts to suitable foraging areas.

Bald eagles are unlikely to make more than incidental use of any creeks within the project area. Given the lack of nesting habitat or winter roost habitat in the Brebner Flats project area, project activities would have **no impact** on bald eagles or potential habitat under any alternative. No further analysis or discussion is warranted.

Gray Wolf

Habitat Relationships

Wolves are highly social animals requiring large areas to roam and feed. They exhibit no particular habitat preference relative to vegetative structure and composition. The gray wolf is a habitat generalist that requires an abundant prey base for survival. Prey species in the Northern Rockies include white-tailed and mule deer, moose, elk, woodland caribou, bighorn sheep, mountain goat, beaver, and snowshoe hare; with small mammals, birds, and large invertebrates sometimes being taken. Opportunistic feeders, they will also prey on carrion when it is available. High prey densities, particularly big game, and isolation from human disturbance characterize quality wolf habitat. Other important habitat features for wolves include den and rendezvous sites (Hansen 1986). Habitat can include forests of all types, rangelands, brushlands, steppes, agricultural lands, wetlands, deserts, tundra, and barren ground areas.

Historically wolves were distributed throughout most of Idaho in unknown populations. Wolf packs of four to ten animals appear to have ranged widely in the mountains of northern and central Idaho. A decline of native ungulates, control programs designed to eradicate wolves, and conflicts with livestock and humans caused the decline of wolf populations and led to the absence of a breeding population in Idaho (Hansen 1986).

An inadequate prey density and a high level of human disturbance are the main factors that appear to limit wolf population and distribution (Mech 1995). Wolf packs appear to be sensitive to human disturbance near active den sites and, depending on the disturbance, may abandon the site (Ballard et al. 1987). They are also sensitive to human disturbance at rendezvous sites and are most sensitive around the early summer sites (USFWS 1987). Limiting wolf mortality associated with human/wolf interactions, limiting human disturbance around den and rendezvous sites, and managing for an abundant prey base are keys in the recovery of wolf populations. The density and distribution of open roads provides a good measure for determining the level of risk to wolves from human-caused mortality and disturbance to den and rendezvous sites.

Affected Environment

The northern Rocky Mountain wolf, a subspecies of the gray wolf, was listed as endangered in 1973. However, based on enforcement problems and a trend to recognize fewer subspecies of wolves, the full species was listed as endangered throughout the entire lower 48 states, except Minnesota, in 1978 (USFWS 1987). In the past, substantial declines in numbers of wolves resulted from control efforts to reduce livestock and big game depredations, and the Rocky Mountain wolf was essentially eradicated from its range by the 1940s. However, wolf reintroductions in Yellowstone National Park and central Idaho in the 1990s, along with protections afforded by the Endangered Species Act, produced a rapid increase in gray wolf population numbers in the Northern Rockies. By 2002, gray wolves had exceeded recovery goals in the Northern Rockies, and have been delisted since May 5, 2011 (USFWS 2011a).

Wolves are known to occur across the St Joe Ranger District (IDFG 2015). Since wolves were re-introduced in Central Idaho in 1995 and 1996, numbers have increased in Idaho and on the IPNF. By 2015 there were an estimated 786 wolves in Idaho, with up to seven known wolf packs

that included at least a portion of the District within their territories (IDFG 2015). The proposed harvest units are in a known wolf pack territory, the Hang Glider pack, which has only 2 wolves but are not considered a breeding pair (IDFG 2015).

Due to their dependence on elk as a preferred prey species, the elk management unit (EMU) encompassing the proposed project area is used as the cumulative effects area for wolves (Map 2). At 72 miles^2 this area is large enough to evaluate effects on a wide-ranging species such as the gray wolf. The proposed project, which includes prescribed burning to enhance ungulate foraging habitat, should contribute to a healthy prey base for wolves in the foreseeable future. The quality and quantity of forage habitat for elk and deer in the area are expected to increase as the treated stands progress through early seral stages (i.e., grass, forbs, shrubs).

The construction, reconstruction, and use of roads for this project could disturb wolves and cause displacement; however, these roads would be closed post-activities and there would be no change to the open motorized road system. Habitat conditions for the wolf prey base are expected to improve with the increase in forage and maintenance of the existing security cover in the analysis area.

Rationale for No Further Analysis

The proposed project would not impact any known denning or rendezvous site or interrupt any linkages or connections between habitats. If it was discovered that an active gray wolf den or rendezvous sites was identified in or adjacent to proposed activity areas they will be spatially and/or temporally buffered as appropriate. No project activities (excluding maintenance and hauling on year-round open road systems) will be allowed within one (1) mile of occupied sites, from April 1 through June 30 for den sites, and from July 1 through August 15 for rendezvous sites. Upon review by the Wildlife Biologist, these distances could potentially decrease based on topographical characteristics at each site.

There would be a slight decrease in the open motorized road system after project completion. The analysis of potential impacts on elk has determined that there would be no discernable effects on prey availability. The proposed alternatives would have no adverse impact on gray wolf habitat nor affect their occurrence at a landscape level. Based on the nature of wolf occurrence and their distribution across the district, their ability to readily disperse long distances, the type of habitat affected, the scope of this action, and the implementation of design features this project **may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or loss of viability to the population or species**. There are currently hunting and a trapping seasons for gray wolves on the St. Joe Ranger District, and by having populations that support harvest levels viability is not a concern for this species.

Blacked-backed Woodpecker

Species Overview

Black-backed woodpeckers (BBWP) are specialists in forests that have insect outbreaks from either wildfire or other reasons. Black-backed woodpeckers are known to use three types of forested habitat: 1) post fire areas that have burned within 1 to 6 years, 2) areas with extensive bark beetle outbreaks causing widespread tree mortality, and 3) a natural range of smaller disturbances scattered throughout the forest such as windthrow, ice damage, or other occurrences that produce small patches of dead trees. These habitat conditions all provide habitat for the black-backed woodpecker's primary food source, woodborer beetles, and larvae (Bonn et al. 2007). They nest primarily in dead trees, with an average 16" d.b.h. (Saab et al. 2002), though

nests are also found in live trees within burned and beetle infested stands (Dixon and Saab 2000). Historically on the IPNF, mixed severity and stand-replacing fires produced new habitat annually in greater amounts than is presently produced under a fire suppression strategy (Zack and Morgan 1994).

Suitable black-backed woodpecker habitat now exists within the Brebner Flats project area as a result of insect infestations and other tree mortality, since there are no recently burned areas of more than a few acres. The Brebner Flats project area may be experiencing normal to elevated conditions of insect and disease infestation because the species composition of the trees in the stands have shifted away from species that are generally less susceptible to insects and diseases and towards species that are more susceptible. Pockets of insect infestations (particularly mountain bark beetle) can be found throughout the St Joe Ranger District.

Rationale for No Further Analysis

The action alternatives would not affect any recent post-fire habitat but would affect areas of insect and disease infestation. Tree mortality is expected to persist in untreated portions of the analysis area, allowing BBWP to maintain populations at low endemic levels. As a result, BBWP populations would likely maintain their current densities and their current distribution would be sustained. Cumulative effects from other activities in the Brebner Flats area, in conjunction with the potential impacts from this project, may impact BBWP to a minor degree. However, the combined effects would be of an inconsequential nature, and would not increase the risk to the species. The retention of snags to meet the snag guidelines and the protection of existing snags within the uncut Riparian Habitat Conservation Areas (RHCA), along with the potential of snag creation from prescribed fire, would reduce the impact of the project on potential BBWP habitat.

On a broader scale, 12,000 acres of forest burned on the St. Joe District in 2015, creating a high potential for BBWP in areas where severe fires occurred (Hutto 2008). Cumulatively, over the ten-year period from 2003 to 2012, timber harvest in Northern Region averaged 1,650 acres per year. During a similar ten-year period (2004 to 2013), an average of 201,643 acres per year were affected by wildfire in the Region, reflecting the fact that BBWP habitat is being created faster than what is being removed.

For the above reasons this **project may impact individuals or habitat, but will not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species**. No further analysis or discussion is warranted.

Black Swift

Species Overview

In the western U.S. black swifts nest on small ledges of cliffs, caves, or other vertical surfaces near or behind dripping water sources, waterfalls, or turbulent spray zones (Wiggins 2004). There are six features strongly associated with black swift nest sites: 1) falling or dripping water, 2) high relief, 3) inaccessibility to ground predators, 4) unobstructed flyways in the immediate nest vicinity, 5) shade during a major portion of the day, and 6) the presence of suitable nest niches (Wiggins 2004). Black swifts feed on insects and forage over forests and in open areas. Risks to the species include: 1) decreases in water flow, 2) recreational use of nest sites (e.g. rock climbers and hikers), and 3) use of pesticides near nesting areas.

Rationale for No Further Analysis

There are no waterfalls in the project area that may serve as suitable habitat. The species is not known or suspected in the project area; therefore, project activities would have **no impact** on black swifts or potential nesting habitat under any alternative. No further analysis or discussion is warranted.

Coeur d'Alene Salamander

Species Overview

Coeur d'Alene salamanders are restricted to cool damp aquatic habitats that have thermal and hydric stability. The species has been found in three major types of habitats in northern Idaho: 1) spring seeps, 2) waterfall spray zones, and 3) along stream edges between 1,800 to 3,500 feet elevation. Known populations occur in association with sharply fractured rock formations in conjunction with both persistent and intermittent surface water, usually in association with coniferous forests. These conditions are critical for Coeur d'Alene salamanders since they respire through the skin, and lose water to the environment through evaporation (Cassirer et al. 1994). Foraging activities are generally restricted to moist spray zones, seeps, or streamside rocks and vegetation, although they may venture beyond these areas during rainy periods. Eggs are presumably laid in underground rock crevices (Groves et al. 1996), and salamanders are usually above ground at night in moist weather in the spring and fall (Nussbaum et al. 1983).

Rationale for No Further Analysis

There are no known salamander sites in the Brebner Flats project area. Due to the geology of the area, the fractured rock seepage habitat favored by Coeur d'Alene salamanders on the St. Joe Ranger District is very rare and no potential areas of suitable habitat were located during field visits.

The requirement for riparian habitat conservation area (RHCA) buffer zones means that any potentially suitable habitat associated with stream edges and waterfall spray zones would not be affected by timber harvest in any alternative. These riparian buffers would also protect any potential fractured rock seep habitat along the lengths of roads adjacent to the creeks.

This project does not have any activity that would directly or indirectly affect Coeur d'Alene salamander habitat. There would be no change to conditions for Coeur d'Alene salamanders with any alternative. Based on the above reasons as well as the lack of suitable habitat, the alternatives would have **no impact** on Coeur d'Alene salamanders, and no further analysis or discussion is warranted.

Common Loon

Species Overview

Common loons generally nest in clear, fish-bearing lakes surrounded by forest, with rocky shorelines, bays, islands, and floating bogs (McIntyre and Barr 1997). Loons are totally dependent on water because their legs are far towards the rear of their bodies, making it difficult for them to walk on land. For nesting, they need lakes with emergent shoreline vegetation and secluded areas for nesting and brood rearing. They construct ground nests on islands, floating bog islets, or other protected areas. Because of their need for large expanses of water for takeoff and landing, loons generally occur in lakes of at least 10 acres in size. They appear to avoid lakes

over 5,000 feet in elevation, as these lakes are generally ice covered until late in the breeding season (USFS 1989).

Rationale for No Further Analysis

There are no lakes in the wildlife analysis area or the St. Joe Ranger District that may serve as potential habitat. The species is not known or suspected in the project area. Based on the lack of suitable habitat and occurrence there would be **no impact** on habitat or the species. No further analysis and discussion is warranted.

Harlequin Duck

Species Overview

Harlequin ducks are sea ducks that winter in coastal areas and migrate inland to breed along swiftly flowing mountain streams. They feed primarily on stream insect larvae in breeding areas. Some of the habitat conditions found on streams used by harlequin ducks are: clear water, riffle habitat, gravel to boulder substrate, woody debris, loafing rocks, shrub/tree vegetated streambanks, and a relative lack of human disturbance or accessibility. Harlequin ducks are primarily affected by disturbance within two "sight distances", or about 100 meters (depending on the density of streamside vegetation), of a nesting stream (Cassirer et al. 1996).

Rationale for No Further Analysis

In northern Idaho, breeding streams are usually associated with mature to old growth western red cedar/western hemlock or spruce/fir forest stands (Cassirer and Groves 1991). Nesting habitat includes very low gradient stream sections with braided channels, intact riparian areas with dense streamside shrub growth, and rich aquatic insect populations (Cassirer and Groves 1991). Turbulent stream sections are used for security and feeding. There are no recent harlequin duck observations in this part of the District. The creeks located within the project area are likely too small to provide suitable harlequin duck habitat and the St. Joe River lacks the habitat characteristics required for harlequin ducks. In addition, there is a large amount of human activity along the St. Joe River and harlequin ducks are sensitive to this type of activity. With no potential habitat for harlequin ducks in the project area, the Brebner Flats Project would have **no impact** on harlequin ducks or their habitat, and no further analysis and discussion is necessary.

Northern Bog Lemming

Species Overview

Northern bog lemmings are found in sphagnum bogs, wet meadows, moist mixed and coniferous forests, alpine sedge meadows, krummholz spruce-fir forests with dense herbaceous and mossy understory, and mossy streamsides. They can be found in small colonies with population densities that may reach 36 individuals per acre (Streubel 2000). Nearly all of the documented occurrences of northern bog lemmings in Idaho, Montana, and Washington have been found in peatlands characterized by extreme abiotic conditions that inhibit the decay of organic materials, allowing the soil to hold large quantities of water and maintain a relatively stable environment for plant and animal species.

Rationale for No Further Analysis

The northern bog lemming has a widespread distribution extending from Alaska to Labrador and south to portions of the northern U.S. This species reaches the southern extension of its range in

northern Washington and Idaho, and are apparently relatively uncommon in this portion of their range. On the IPNF, they are only known to occur in the far northern (i.e., "Kaniksu" Zone) districts, not on the St. Joe Ranger District. Therefore, this project would have **no impact** on the northern bog lemming. No further analysis and discussion is necessary.

Townsend's Big-eared Bat

Species Overview

Townsend's big-eared bats are primarily cave-dwelling species. Although they occur in a wide variety of habitats, distribution tends to be correlated with the availability of caves, especially old mine workings (Pierson et al. 1999). Caves and cave-like structures are a critical habitat for this species, both as hibernacula in the winter and as roosts for summer nursery colonies. They occasionally use bridges and open buildings for roosting and in some places have been known to use building attics as maternity sites (Pierson et al. 1999). In northern Idaho, Townsend's big-eared bats primarily roost in abandoned mines. Loss and/or disturbance of hibernacula and roosting habitat are the limiting factor for Townsend's big-eared bats. Notable threats include abandoned mine closures, recreational caving, and renewed mining at previous mine sites (Pierson et al. 1999).

Rationale for No Further Analysis

Townsend's big-eared bats are only known to occur on the Kaniksu portion of the IPNF. Surveys on the St. Joe Ranger District have not caught or detected big-eared bats (Landreth 2002, Derusseau 2003, and Sherwin 2003). There are no known mines or caves in the project area that may serve as potential habitat. The species is not known or suspected in the project area. Based on the lack of species occurrence, and of any suitable habitat (i.e., adits, mineshafts, or caves), there would be **no impact** on habitat or the species; and no further analysis or discussion is warranted.

Western Toad

Species Overview

Western or boreal toad breeding habitat includes shallow, quiet water in lakes, marshes, bogs, ponds, wet meadows, slow-moving streams, backwater channels of rivers, and other persistent water sources (Maxell 2000). Young toads are restricted in distribution and movement by available moist habitat, while adults can move several miles and reside in marshes, wet meadows, or forested areas. Toads hibernate in the winter in habitats that maintain high humidity and above-freezing temperatures. Areas that provide shelter for hibernating toads include rodent burrows, beaver lodges, and beaver dams (Loeffler 1998). Since this species depends on wetlands to breed, the reduction of wetlands or adverse impacts on wetlands could potentially have detrimental effects on western toads. Males appear to have a home range within 300 meters of breeding sites and show high site fidelity (Loeffler 1988); therefore, breeding habitat is likely the most important factor in maintaining toad presence in an area. It is important that toads be able to move among their seasonal habitats of breeding ponds, summer range, and overwinter refugia (Loeffler 1998). The biggest potential barrier to their movement is roads. Roadkill has been identified as a risk factor for the western toad (Maxell 2000). In addition to direct mortality, it has been suggested that steep road cuts can be a barrier to toads moving between seasonal habitats. Juvenile toads are vulnerable to being killed by motorized vehicles when they are dispersing from their natal ponds.

Based on habitat needs as described in the literature, the mesic nature of much of the forests of the IPNF indicates that toads have opportunities to find persistent small water sources for breeding, and could successfully disperse through moist forest to breeding and overwintering habitat.

There are no known observations of western toads within the project area; however, there are many mesic timbered stands present that could provide suitable habitat. Potential breeding habitat would be limited mainly to riparian areas along creeks, as there are no lakes, ponds, or marshes present in the project area. The project area is primarily an area with steep gradients leading to faster flowing creeks and streams and lacks low gradient, flatter streams that allow for pools, backwater eddies, etc., all of which are preferred habitat for western toads. There may be areas in the project area that have these flatter areas, so it is possible western toads are in the project area, but as a whole, the area is not ideal western toad habitat.

Rationale for No Further Analysis

The action alternatives may impact individual toads during project implementation. However, the Inland Native Fish Strategy (INFS) buffers and Best Management Practices (BMPs) states that all fish-bearing streams would be buffered by 300 feet. Perennial streams are buffered from activity by at least 150 feet. Smaller springs, seeps, and wetlands would be buffered by at least 50 feet if any are identified near or within harvest units. As a result, the potential for disturbance to breeding habitat and reproduction is discountable.

The project work and reasonably foreseeable activities within the analysis area (e.g., public activities, fire suppression, and others listed in Table 1 of the Wildlife Report) would not affect breeding habitat, and potential mortality to individual toads from traffic related to these activities would be highly unlikely since the project work is expected in steeper areas, generally not suitable western toad habitat. While the action alternatives may affect individual toads to differing extents based on acres affected, they are not expected to be measurably different at the population level. Consequently, the Brebner Flats project in conjunction with past, present, and reasonably foreseeable actions **may impact western toads or their habitat, but would not likely contribute to a trend towards Federal listing or cause a loss of viability to the population or species**.

Flammulated Owl, Pygmy Nuthatch, and Fringed Myotis

The flammulated owl, pygmy nuthatch, and fringed myotis are considered together as they are species that are closely tied to dry site habitat, typically consisting of large, mature, xeric ponderosa pine and/or Douglas fir forest.

Pygmy nuthatches are sedentary, year-round residents of ponderosa pine forests (Ghalambor 2003). They rely heavily on the foliage of live, larger ponderosa pines as foraging habitat and on larger ponderosa pine snags for nesting and roosting cavities (McEllin 1979). They prefer to forage in the dense foliage of pines and subsist on arthropods and pine seeds (Ghalambor 2003). Their almost exclusive association with mature to late seral ponderosa pine stands that are fairly open (less than 70% canopy closure) leads to a patchy distribution of the pygmy nuthatch; as they mirror ponderosa pine's distribution (Kingery and Ghalambor 2001, Engle and Harris 2001).

Flammulated owl nesting habitat is associated with dry, relatively open older forests dominated by ponderosa pine and Douglas fir with 35-65% canopy closure (MT Partners in Flight 2000, Howie and Ritcey 1987, Reynolds and Linkhart 1992). All recorded nests but one came from forests where ponderosa pine trees were at least present, if not dominant in the stand (Reynolds

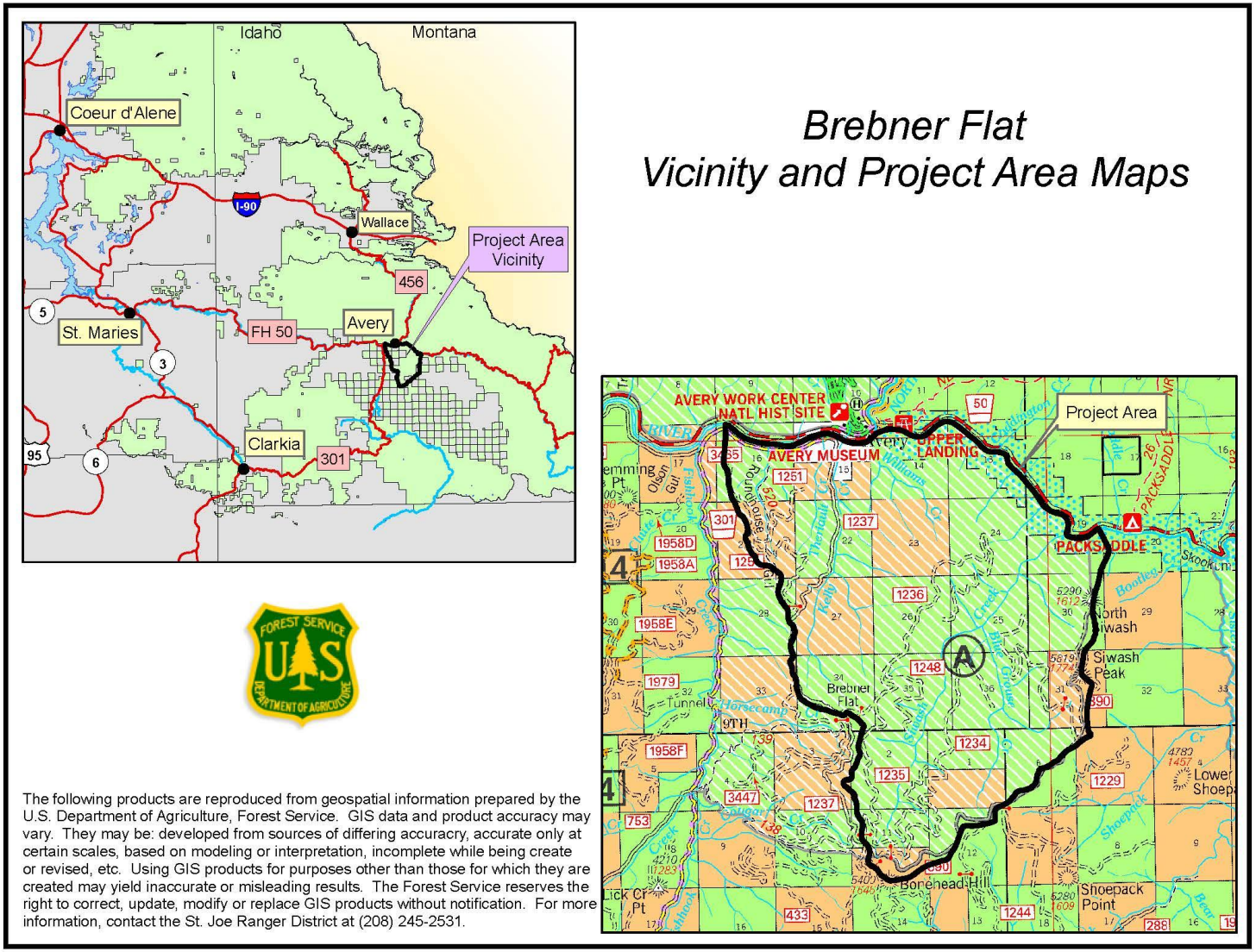
and Linkhart 1992). Flammulated owls are secondary cavity nesters needing nest trees or snags of at least fourteen inch diameter (McCallum 1994).

Fringed myotis are members of the group of bats referred to as the "long-eared" bats. They use a fairly broad range of habitats represented by open areas (e.g. grasslands) interspersed with mature forests (usually ponderosa pine, pinion-juniper or oak) at middle elevations that contain suitable roost sites and are near water sources (Keinath 2004). Where available, fringed myotis use caves, mines, buildings and rock crevices as day, night, maternity or hibernation roost sites (Ellison et al. 2004). They also roost underneath the bark and inside cavities of snags, particularly larger ponderosa pine and Douglas-fir snags in medium stages of decay (O'Farrell and Studier 1980, Rabe et al. 1998, Weller and Zabel 2001, Rasheed et al. 1995).

FSVeg data and habitat validation surveys have determined there are no dry site habitat types in the project area (WL 18) therefore, the presence of these species is unlikely. Based on the lack of species occurrence, and of any suitable habitat (dry-site habitat), there would be **no impact** on habitat or the species; and no further analysis or discussion is warranted.

Appendix D: Maps

Map 1: Vicinity Map



Map 2: Proposed Elk Security

Appendix E: References

Aubry, Keith B., Kevin S. Mckelvey, and Jeffrey P. Copeland. 2007. Distribution and broadscale habitat relations of the wolverine in the contiguous United States. J. Wildl. Manage. 71: 2147-2158.

Baker, M.D, and M.J. Lacki. 1997. Short-term changes in bird communities in response to silvicultural prescriptions. Forest Ecology and Management. 96:27-36.

Ballard, W.B., J.S. Whitman and C.L. Gardner. 1987. Ecology of an exploited wolf population in south-central Alaska. Wildlife Monographs, Number 98. 54 pp.

Bonn, J.; Dixon, B.; Kennedy, E.; Pengeroth, D. 2007. Black-backed Woodpecker Northern Region Overview, Key Findings and Project Considerations. USDA Forest Service, Missoula, MT. 41 p.

Brawn, J.D., Robinson, S.K., and F.R. Thompson III. 2001. The role of disturbance in the ecology and conservation of birds. Annual Review of Ecology and Systematics. 32:251-276.

Brodie, J., H. Johnson, M. Mitchell, P. Zager, K. Proffitt, M. Hebblewhite, M. Kauffman, B. Johnson, J. Bissonette, C. Bishop, J. Gude, J. Herbert, K. Hersey, M. Hurley, P.M. Lukacs, S. McCorquodale, E. McIntire, J. Nowak, H. Sawyer, D. Smith, and P.J. White. 2013. Relative influence of human harvest, carnivores, and weather on adult female elk survival across western North America. Journal of Applied Ecology. 50: 295–305.

Campbell, S.P., Witham, J.W., and M.L. Hunter Jr.. 2007. Long-term effects of group-selection timber harvesting on abundance of forest birds. Conservation Biology. 21:1218-1229

Cassirer, E. F.; C. R. Groves; D.L. Genter. 1994. Conservation Assessment for the Coeur d'Alene Salamander *Plethodon idahoensis*. USDA Forest Service. Region 1. 55 p.

Cassirer E. F., J. D. Reichel, R. L. Wallen, and E. C. Atkinson. 1996. (Draft) Harlequin Duck (Histrionicus histrionicus) United States Forest Service/Bureau of Land Management Habitat Conservation Assessment and Conservation Strategy for the U.S. Rocky Mountains. 54 p.

CEQ. 2005. Guidance on the consideration of past actions in cumulative effects analysis. Council of Environmental Quality. Washington, D.C. June 24, 2005. [Available online] http://www.gsa.gov/graphics/pbs/CEQ_Guidance_Consideration_PastActions_CumulativeEffectsAnalysis.pdf [15July2013].

Clark, L.R. and R.N. Sampson. 1995. Forest ecosystem health in the inland west: A Science and Policy Reader. Forest Policy Center, Washington D.C. 37 pp.

Copeland, J.P., K.S. McKelvey, K.B. Aubry, A. Landa, J. Persson, R.M. Inman, J. Krebs, E. Lofroth, H. Golden, J.R. Squires, A. Magoun, M.K. Schwartz, J. Wilmot, C.L. Copeland, R.E. Yates, I. Kojola, and R. May. 2010. The bioclimatic envelope of the wolverine (Gulo gulo): do climatic constraints limit its geographic distribution? Can. J. Zool. 88: 233-246.

Costello, C.A., Yamaski, M., Pekins, P.J., Leak, W.B., and C.D. Neefus. 2000. Songbird response to group selection harvests and clearcuts in a New Hampshire northern hardwood forest. Forest Ecology and Management.. 127:41-54.

Craig, G.R. and J.H. Enderson. 2004. Peregrine falcon biology and management in Colorado, 1973-2001. Colorado Division of Wildlife Technical Publication No. 43. 68 pp. plus appendices.

Derusseau, Sabrina. 2003. 2003 SZ Bat Surveys. Unpublished paper on file at: U.S.D.A. Forest Service, St. Joe Ranger District, St. Maries, Idaho. 4 p.

Dixon, R.D. and V.A. Saab. 2000. Black-backed Woodpecker (Picoides arcticus), The birds of North America online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology.

Ellison, L.E., M.B. Wunder, C.A. Jones, C. Mosch, K.W. Navo, K. Peckham, J.E. Burghardt, J. Annear, R. West, J. Siemers, R.A. Adams and E. Brekke. 2004. Colorado Bat Conservation Plan. Colorado Committee of the Western Bat Working Group.

Executive Order 13186. 2001. Responsibilities of Federal Agencies to Protect Migratory Birds. William J. Clinton. The White House. January 10, 2001 [Available online] http://ceq.hss.doe.gov/nepa/regs/eos/eo13186.html [15July2013].

Evan, H. F. 1960. A preliminary investigation of caribou in northwestern United States. Fulfillment of Master of Science in Teaching Montana State University.

FSM 2670. Forest Service Manual 2670-2671, WO Amendment 2600-2005-1, September 23, 2005. (Policy).

Ghalambor, C. 2003. Conservation Assessment of the Pygmy Nuthatch in the Black Hills National Forest, South Dakota and Wyoming. USDA Forest Service. Rocky Mountain Region. 55 p.

Groves, C.R., E.F. Cassirer, D.L. Genter, and J.D. Reichel. 1996. Coeur d'Alene salamander. Natural Areas Journal 16:238-247.

Hansen, J. 1986. Wolves of Northern Idaho and Northeastern Washington. MT Cooperative Wildlife Research Unit, U.S. Fish and Wildlife Service. 88 pp.

Hillis, J.M., Thompson, M.J., Canfield, J.E., Lyon, L.J., Marcum, C.I., Dolan, P.M., and D.W. McCleery. Defining elk security: the Hillis Paradigm. P. 38-43 in Proceedings of a symposium on elk vulnerability. Bozeman, MT: Montana State University. 7 p.

Hornocker, M.G. and H.S. Hash. 1981. Ecology of the wolverine in Northwestern Montana. Idaho Cooperative Wildlife Research Unit, College of Forestry, Wildlife and Range Sciences, Univ. of Idaho, Moscow, ID. In Canadian Journal of Zoology, vol. 59. 15 p.

Hutto, R.L.. 2008. The ecological importance of severe wildfires: Some like it hot. Ecological Applications, 18:1827–1834.

IDFG. 1995. Habitat conservation assessments and strategies for forest carnivores in Idaho. Boise, Idaho. 77 p.

IDFG. 2015. Idaho Wolf Monitoring Report. Idaho Department of Fish and Game. Boise, ID. 81 pp. [Available online] https://idfg.idaho.gov/sites/default/files/idaho-wolf-monitoring-progress-report-2015.pdf

Keinath, D.A. 2004. Fringed Myotis (Myotis thysanodes): a technical conservation assessment. USDA Forest Service, Rocky Mountain Region. [Available Online] http://www.fs.fed.us/r2/projects/scp/assessments/fringedmyotis.pdf [15July2013].

Keller, J.K., Richmod, M.E., and C.R. Smith. 2003. An explanation of patterns of breeding bird species richness and density following clearcutting in northeastern USA forests. Forest Ecology and Management. 174:541-564.

Landreth, J. 2002. St. Joe District Bat Surveys, July and August, 2002. Unpublished Report. p. 17.

Leege, T.A. 1984. Guidelines for Evaluating and Managing Summer Elk Habitat in Northern Idaho. Wildlife Bulletin No. 11, Idaho Department of Fish and Game. 38 p.

Loeffler, C. (ed.). 1998. Conservation Plan and Agreement for the Management and Recovery of the Southern Rocky Mountain Population of the Boreal Toad (Bufo boreas boreas). Boreal Toad Recovery Team and Technical Advisory Group. 80 p.

Lofroth, Eric C., and Peter K. Ott. 2007. Assessment of the sustainability of wolverine harvest in British Columbia, Canada. J. Wldlife. Journal of Wildlife Management: 71:2193-2200.

Maxell, B.E. 2000. Management of Montana's amphibians: a review of factors that may present a risk to population viability and accounts on the identification, distribution, taxonomy, habitat use, natural history, and the status and conservation of individual species. Report to USFS Region 1; Order Number 43-0343-0-0224. University of Montana, Wildlife Biology Program. Missoula, Montana. 161 pp.

MBEWG. 1991. Montana Bald Eagle Working Group. Habitat Management Guide for Bald Eagles in Northwestern Montana. USDA. Forest Service. Northern Region. 29 pp.

McIntyre, J.W. and J.F. Barr. 1997. Common loon (Gavia immer) in The Birds of North America, No. 313. A. Poole and F. Gill (eds.). The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, D.C.

Mech, L. David, and Sagar M. Goyal. 1995. Effects of canine parvovirus on gray wolves in Minnesota. The Journal of wildlife management 7: 565-570.

NFMA Sec. 6[g][3][B]. National Forest Management Act of 1976. [Available online] http://www.fs.fed.us/emc/nfma/includes/NFMA1976.pdf [15July2013].

Nussbaum, R.A, E.D. Brodie, Jr., and R.M. Storm. 1983. Amphibians and reptiles of the Pacific Northwest. University of Idaho Press, Moscow, ID. 332 pp.

O'Farrell, M.J. and E. H. Studier. 1980. *Myotis thysanodes*. Mammalian Species 137:1-5.

Pierson, E.D., M.C. Wackenhut, J.S. Altenbach, P. Bradley, P. Call, D.L. Genter, C.E. Harris, B.L. Keller, B. Lengus, L. Lewis, B. Luce, K.W. Navo, J.M. Perkins, S. Smith, and L. Welch. 1999. Species conservation assessment and strategy for Townsend's big-eared bat (Corynorhinus townsendii townsendii and Corynorhinus townsendii pallescens). Idaho Conservation Effort, Idaho Department of Fish and Game, Boise, Idaho. 52 p.

Rabe, M.J., T.E. Morrell, H. Green, J.C. deVos, Jr. and C.R. Miller. 1998. Characteristics of ponderosa pine snag roosts used by reproductive bats in northern Arizona. J. Wildl. Manage. 62:612-621.

Raley, C.M., Lofroth, E.C., Truex, R.L., Yaeger, J.S., Higley, J.M., 2012. Habitat ecology of fishers in western North America: a new synthesis. In: Aubry, K.B., Zielinski, W.J., Raphael, M.G., Proulx, G., Buskirk, S.W. (Eds.), Biology and Conservation of Martens, Sables, and Fishers: A New Synthesis. Cornell University Press, Ithaca, New York, pp. 231–254.

Rasheed, S.A., P.F.J. Garcia and S.L. Holroyd. 1995. Status of the Fringed Myotis in British Columbia. Wildlife Working Report. WR-73, pp. 1-17.

Reynolds, R.T., and B.D. Linkhart. 1992. Flammulated owls in ponderosa pine: pp. 166-169 in Old-growth forests in the southwest and Rocky Mountain regions; proceedings of a workshop. USDA Forest Service Gen. Tech. Report RM-GTR-213.

Ruediger, B., J. Claar, S. Gniadek, B. Holt, L. Lewis, S. Mighton, B. Naney, G. Patton, T. Rinaldi, J. Trick, A. Vandehey, F. Wahl, N. Warren, D. Wenger, and A. Williamson. 2000. Canada lynx conservation assessment and strategy. U.S. Forest Service, U.S. Bureau of Land Management, and U.S. National Park Service. Forest Service Publication #R1-00-53, Missoula, MT.

Saab, V. A., R. Brannon, J. D. Dudley, L. Donohoo, D. Vanderzanden, V. Johnson, and H. Lachowski. 2002. Selection of fire-created snags at two spatial scales by cavity-nesting birds. U.S. Department of Agriculture Forest Service General Technical Report PSW-GTR-181, Portland, Oregon, USA.

Servheen, C. and R. Shoemaker. 2010. Bitterroot Mountains Bear DNA and Camera Survey: 2008-2009. Final Report. U.S. Fish and Wildlife Service. Missoula, Montana. 26 p.

Sreekar, R., Huang, G., Yasuda, M., Quan, R., Goodale, E., Corlett, R.T., and K.W. Tomlinson. Effects of forests, roads and mistletoe on bird diversity in monoculture rubber plantations. www.nature.com/scientificreports. 6:21822

Streubel, D. 2000. Synaptomys borealis (northern bog lemming). Idaho Museum of Natural History. Idaho State University, Pocatello, ID. Website accessed at:

Schultz, C. 2010. Challenges in Connecting Cumulative Effects Analysis to Effective Wildlife Conservation Planning. BioScience, Vol. 60, No. 7 (July/August 2010). pp. 545-551.

USFS. 1987. Idaho Panhandle National Forests Forest Plan. Forest Service. Northern Region. 203 pp.

USFS. 2007. Northern Rockies Lynx Management Direction Record of Decision and Attachment. Northern, Intermountain and Rocky Mountain Regions. 67 p.

USFS. 2015. Idaho Panhandle National Forests Land Management Plan: 2015 Revision. Forest Service. Northern Region. 187 pp.

USFS and USFWS. 2008. Memorandum of understanding between the U.S. Department of Agriculture Forest Service and the U.S. Fish and Wildlife Service to promote the conservation of migratory birds. FS Agreement# 08-MU-1113-2400-264.

USFWS. 1986. Recovery plan for the Pacific Bald Eagle. U.S. Fish and Wildlife Service, Portland, OR. 160 pp.

USFWS. 1987. Northern Rocky Mountain wolf recovery plan. U.S. Fish and Wildlife Service, Denver, CO. 119 pp.

USFWS. 1994. Recovery Plan for Woodland Caribou in the Selkirk Mountains. Portland, Oregon. 71pp.

USFWS. 1996. Grizzly Bear Recovery Plan Supplement: Bitterroot Ecosystem Recovery Plan Chapter. U.S. Fish and Wildlife Service, Missoula, MT. 25 p.

USFWS. 2000. Grizzly Bear Recovery in the Bitterroot Ecosystem, Summary of the Final Environmental Impact Statement. Missoula, MT. 36 p.

USFWS. 2009. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Contiguous United States Distinct Population Segment of the Canada lynx; Final Rule. February 25, 2009. Federal Register Vol. 74, No. 36: p. 8616-8702.

USFWS. 2011a. Endangered and Threatened Wildlife and Plants; Reissuance of Final Rule to identify the Northern Rockies Mountain Population of Gray Wolf as a Distinct Population Segment and To Revise the List of Endangered and Threatened Wildlife. May 5, 2011. Federal Register Vol. 76, No. 87: p. 25590-25592.

USFWS. 2011b. Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To List a Distinct Population Segment of the Fisher in Its United States Northern Rocky Mountain Range as Endangered or Threatened With Critical Habitat. June 30, 2011. Federal Register Vol. 76, No. 126: p. 38504-38532.

USFWS. 2012. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Southern Selkirk Mountains Population of Woodland Caribou; Final Rule. Federal Register, Vol. 77, No. 229, November 28, 2012. p. 71042-71082.

USFWS. 2013. Endangered and Threatened Wildlife and Plants; Threatened Status for the Distinct Population Segment of the North American Wolverine Occurring in the Contiguous United States. Federal Register, Vol. 78, No. 23, February 4, 2013, p. 7864-7890.

USFWS. 2014. Endangered and Threatened Wildlife and Plants; Threatened Status for the Distinct Population Segment of the North American Wolverine Occurring in the Contiguous United States. Establishment of a Non-Essential Experimental Population of North American Wolverine in Colorado, Wyoming and New Mexico. Federal Register, Vol. 79, No.156, August 13, 2014, p. 47521-47575.

USFWS. 2016. Endangered and Threatened Wildlife and Plants; Proposed Rule for the North American Wolverine. Federal Register, Vol. 81, No.201, October 18, 2016, p. 71670-71671.

USFWS. 2017. Endangered and Threatened Wildlife and Plants; Proposed Rule for the Northern Rocky Mountain Distinct Population Segment of the Fisher. Federal Register, Vol. 82, No. 9, January 13, 2017, p. 4404-4405.

Weakland, C.A., Bohal Wood, P., and W.M. Ford. 2002. Responses of songbirds to diameter-limit cutting in the central Appalachians of West Virginia. Forest Ecology and Management. 155:115-129.

Weller, T.J. and C.J. Zabel. 2001. Characteristics of Fringed Myotis day roosts in northern California. Journal of Wildlife Management 65:489-497.

Wiggins, D. 2004. Black Swift (Cypseloides niger): a technical conservation assessment. [Available Online]. USDA Forest Service, Rocky mountain Region. 43 p. Available: http://www.fs.fed.us/r2/projects/scp/assessments/blackswift.pdf [15July2013].

Wisdom, M.J, L.R. Bright, C.G. Carey, W.W. Hines, R.J. Pedersen, D.A. Smithey, J.W. Thomas, G.W. Witmer. 1986. A Model to Evaluate Elk Habitat in Western Oregon. General Technical Report. USDA Forest Service, Pacific Northwest Research Station. Portland, Oregon.

Zack, Arthur C. and P. Morgan. 1994. Fire History on the Idaho Panhandle national Forest. Review Draft. March 22, 1994. Coeur d'Alene, ID. 44 p. plus Appendices